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JULY 27, 1957
VOL. 153 — NO. 4

Telephony

THE JOURNAL OF THE TELEPHONE INDUSTRY

BRAILLE PBX

Magdalene Phillips operates the new Braille PBX Switchboard installed by Pacific Telephone & Telegraph Co. at Guide Dogs For The Blind, Inc., San Rafael, Cal. Her guide dog, a German Shepherd, looks on with interest.

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ELECTRONICS SECTION — Page 23

MANAGEMENT • PLANT • TRAFFIC • COMMERCIAL • LEGAL • ACCOUNTING

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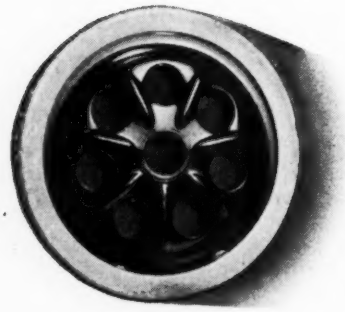
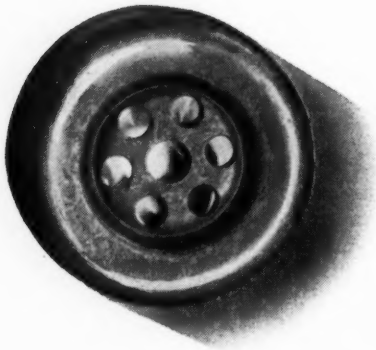


The Stromberg-Carlson "500" type ele



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always directed in the Independents' interest.

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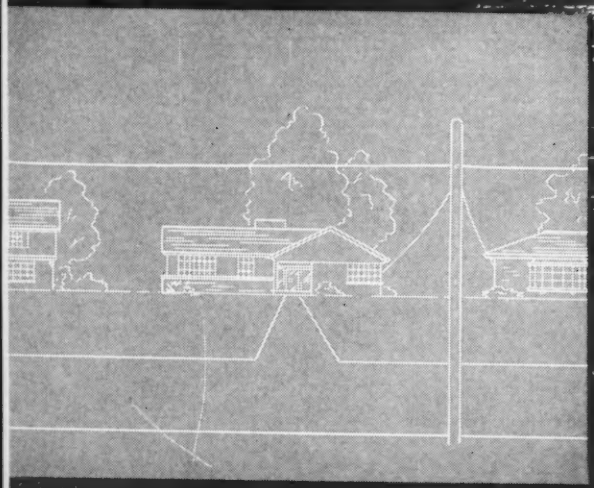

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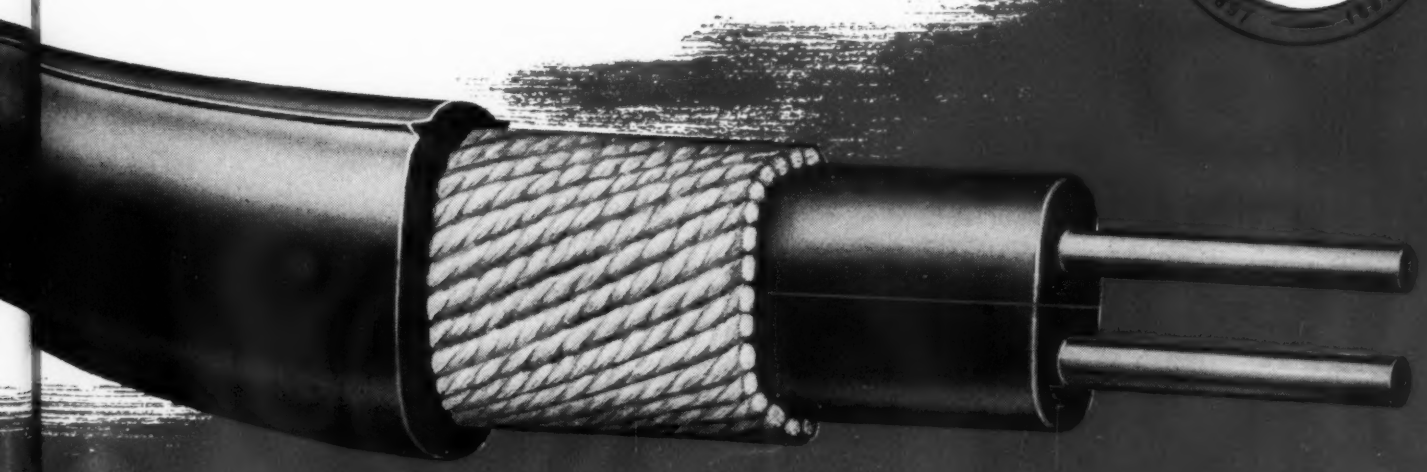

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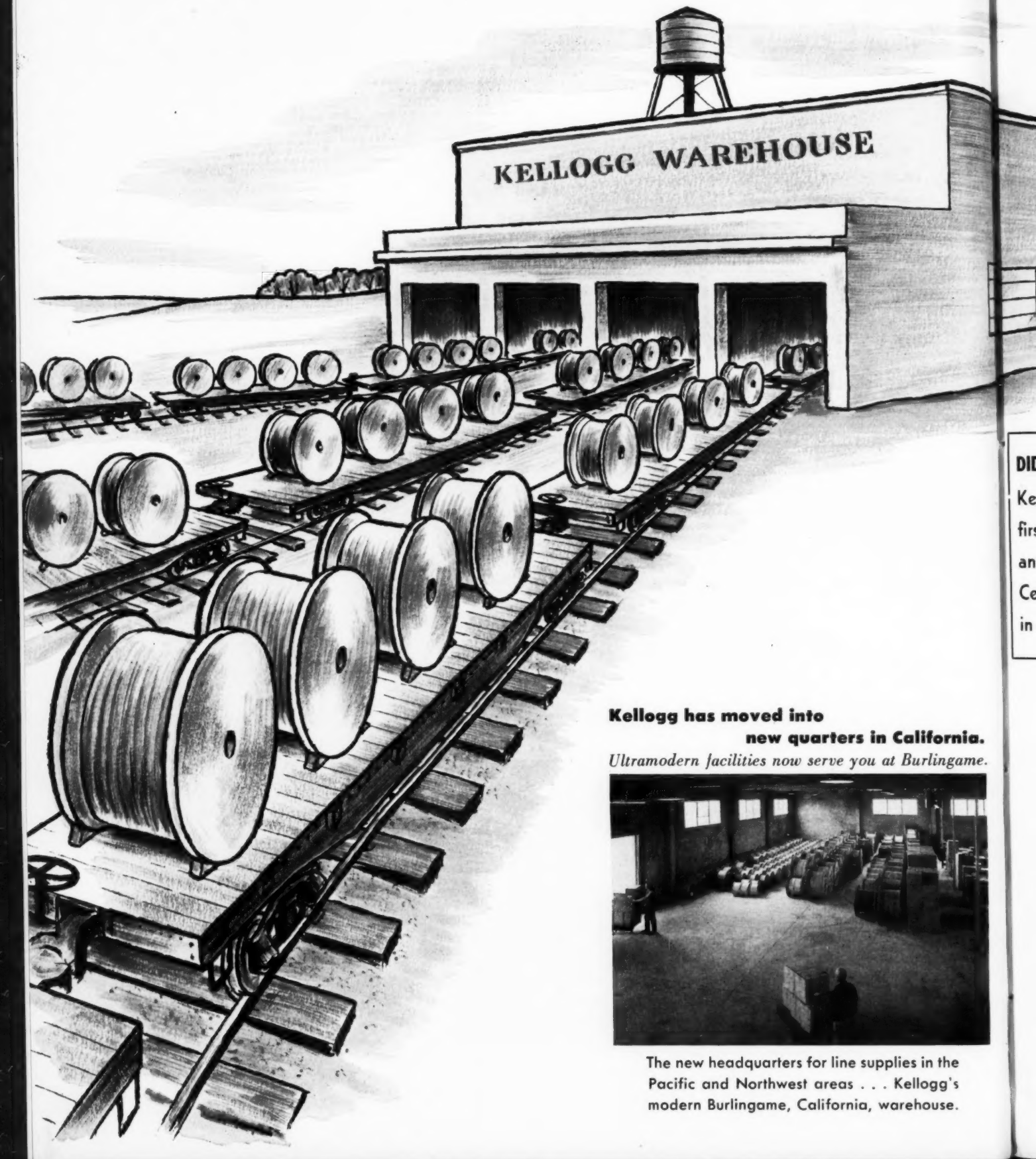

Kellogg has moved into new quarters in California.

Ultramodern facilities now serve you at Burlingame.

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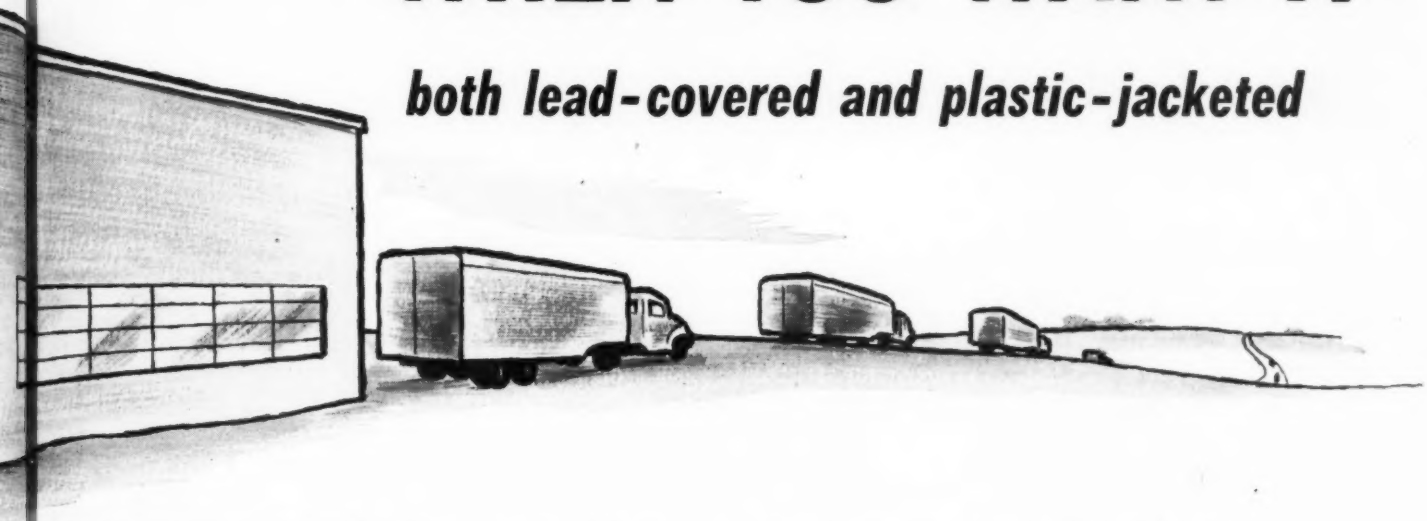

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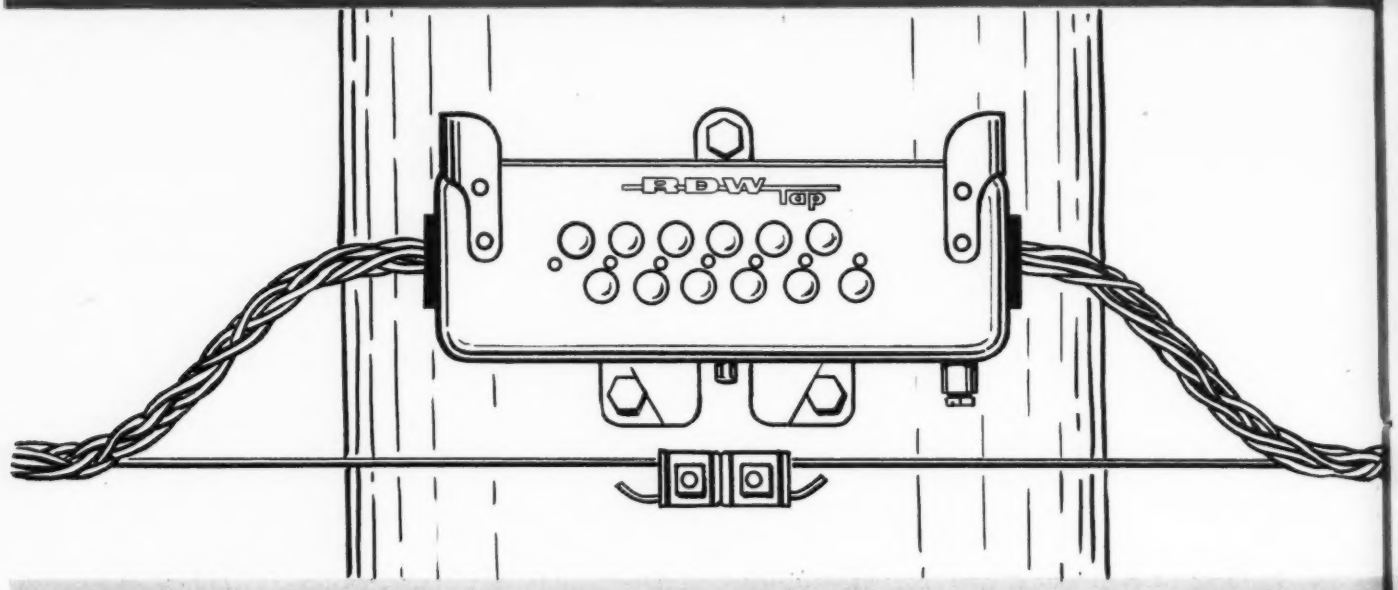

NO CUTTING
NO SPLICING
NO TAPING
NO ADDED IMPEDANCE

Just a logical and economical method of connecting subscriber drops to the rural distribution wire running straight through the RDW TAP. Installation of the unit has been greatly simplified by the following:

1. Mount the RDW TAP with the lag screw bracket to the pole without gaining.
2. Provide adequate RDW line slack.
3. Cut out the excess RDW messenger line slack.
4. Anchor cut ends of RDW messenger wire to pole below the RDW TAP.
5. Separate selected pairs and connect to face plate studs without cutting or splicing.
6. Insert drops and connect to designated studs.

The RDW TAP provides a low-cost maintenance test point, and additional drops can be installed without opening splices or installing additional equipment. Sizes range in 6, 11 and 16 pair capacities.

Protection is optional but can be added later on a pair by pair basis with Cook Minigap or Mytigap arresters.

*Rural Distribution Wire

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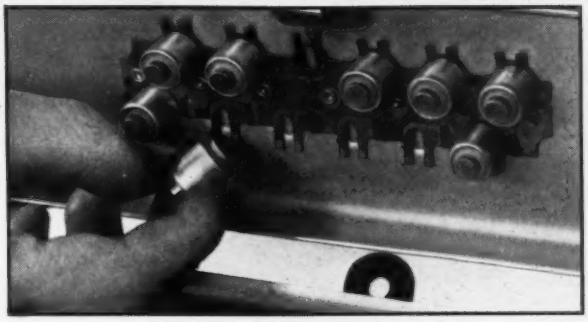
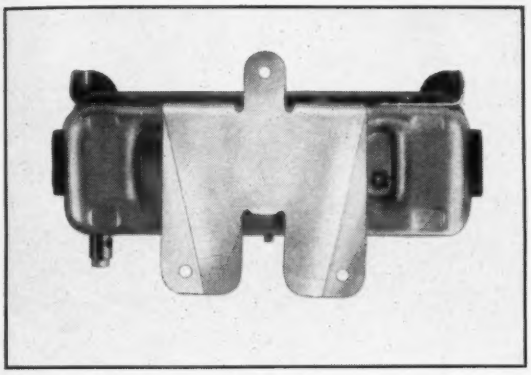
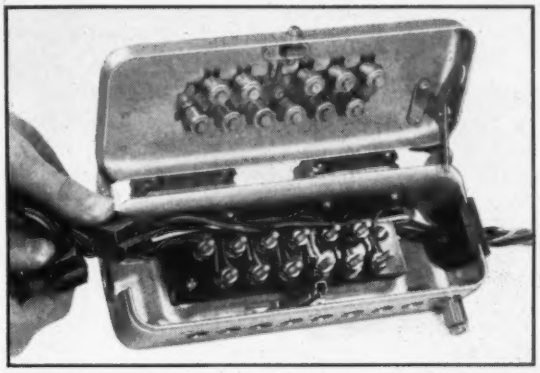


RDW TAP contains the salient features of the Cook Stranterm.



Bracket for mounting direct to the pole without gaining.



Split grommets provide straight through wire installation.

Optional pair protection, accessible studs and room to sort selected pairs is provided by this compact assembly.

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FLASHES AND PLUGS

STRAIGHT AND NARROW. The average person is honest and goes out of his way to hew to the straight and narrow path, Illinois Bell Telephone Co. believes.

The company ought to be a good judge. Every day, in one way or another, its customers have 13 million contacts with Illinois Bell services and employes. And there are chances for people to nick the company.

"But few take advantage of these chances," J. N. Hunter, Chicago general commercial manager says. "And those who do, frequently have a change of heart." Hunter pointed to the "Conscience Fund" as an example. It's an unusual month when Illinois Bell doesn't receive a "contribution" from some conscience-stricken person. The amounts, of course, vary.

A "conscience-stricken Chicago visitor" sent in a dime along with a letter explaining the coin had been returned to him in error. This sometimes happens when money is released into the telephone's return chute rather than the collection box.

"First I thought, 'It's just a dime, so I'll keep it,' " wrote the repentant customer. "But my conscience has bothered me to the extent that I'm sending you this dime as I wish to get this off my mind."

Everyone isn't that explicit. A money order for $33.50 was accompanied by a note. "Due to troubled conscience," it said, "I am enclosing this money owed to the Illinois Bell Telephone Co." Nobody knows why.

Unpaid bills seem to weigh heavily on a lot of consciences. "Enclosed is $10," wrote another. "This is the approximate amount of a bill we were unable to pay in 1940, but now we have the money and are paying it."

Even more scrupulous was the ex-subscriber who sent in a $9.40 money order. This, he explained, took care of what he owed, plus 6 per cent interest.

But coins returned in error and unpaid bills don't make up the entire amount of conscience payments. A $20 bill came in for "supplies I once 'borrowed' from one of your trucks." Another customer walked off with a new fountain pen from the counter of a telephone business office. Perhaps it was the very pen he used to write the note that eventually accompanied three one-dollar bills.

Telephone people admit that all folks don't add to the "conscience fund," but in many cases chalk it up to forgetfulness. On the other hand, there are a few who have delusions of making a dishonest dollar. Alert police soon make this group wish they were more like the Average Honest John Citizen.

But all the company's conscience payments don't come from repentant customers. Recently Illinois Bell received a money order for $29. "This is pay for days I reported ill when I wasn't," read the accompanying note. Telephone people usually are paid for time off because of illness, and this one had apparently decided a few afternoons in the right field bleachers beat working.

One of the most technically honest customers was the gentleman who mailed in two quarters to telephone company president W. V. Kahler. He wrote that the coins had been returned to him in error from a pay telephone. Obviously they belonged to the company, he said. So he was returning them as a matter of simple honesty.

But, he wound up, how "honest" is the telephone company? Since he'd mailed them their money, wasn't he entitled to have his postage refunded? He certainly was, Kahler agreed, and enclosed a three-cent stamp with his note of thanks.

Telephony

THE JOURNAL OF THE TELEPHONE INDUSTRY
Since 1901

July 27, 1957

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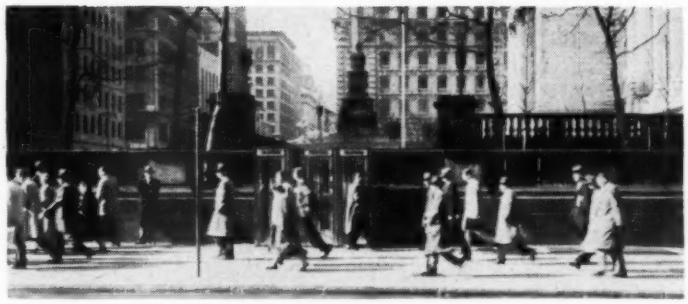

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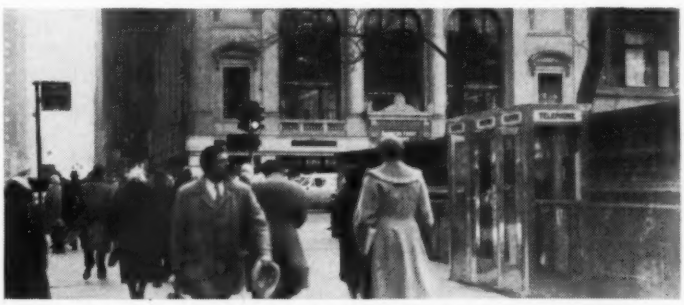

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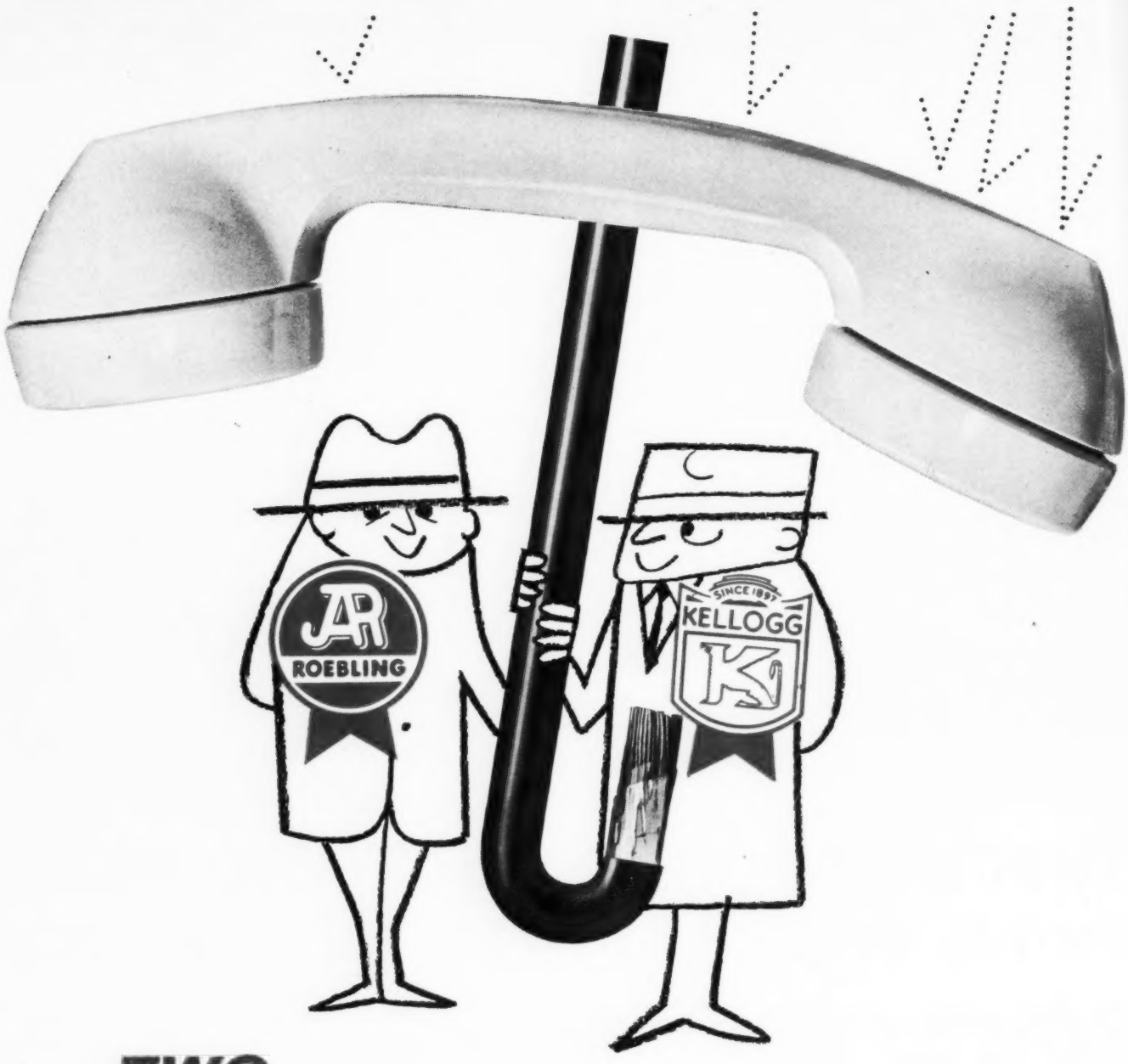

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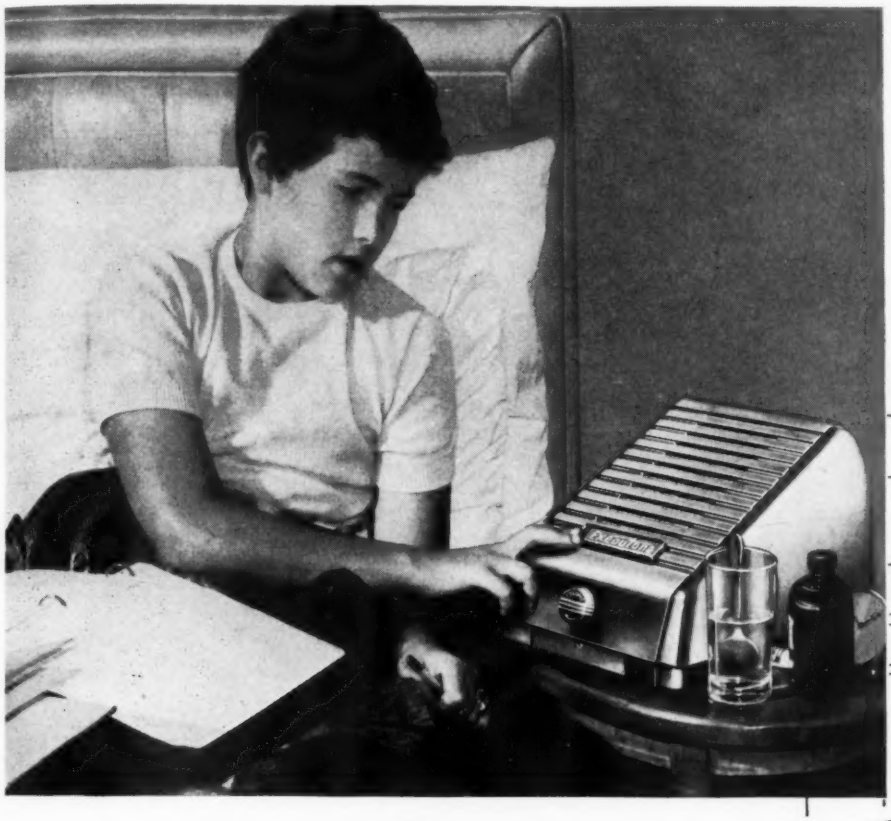

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IN THE NATION'S CAPITAL

BY FRANCIS X. WELCH, WASHINGTON EDITOR

Probe of federal regulatory commissions by House group may kick up a storm . . . party politics seen as a motive. Pay-as-you-see TV an example of conflict between FCC and Congress. Comments on Great Britain's telephone rate raise.

THERE IS PLENTY of trouble being cooked up for all the federal regulatory commissions in Washington these days. The storm probably will not break until some time next fall. But there is a little-known special subcommittee appointed by the Speaker of the House of Representatives for the job of looking into the way these federal commissions work. It has the highly improbable name of Subcommittee on Legislative Oversight.

Before you jump to any conclusion that the fellow who thought up that name must have been up late the night before, it should be noted that it is the personal brain child of none other than the politically astute Speaker of the House himself, Sam Rayburn of Texas, sometimes known as Mr. Democrat.

The ostensible purpose of this subcommittee's job is no more subject to reproach than the Ten Commandments or the Sermon on the Mount. But there are some irreverent persons, including this writer, who see behind the lofty facade party politics rearing its ugly head.

Rayburn said last February, when the subcommittee was created, that it was "to see whether or not the law, as we intend it, is being carried out or whether a great many of these laws are being repealed or revamped by those who administer them."

Translated into somewhat plainer language, the subcommittee is supposed to find out whether the regulatory commissions (including the Federal Communications Commission) have been taken over by the administration through political appointments and policy telephone calls from the White House.

In addition to the FCC, the regulatory commissions which are due for a good going over (incidentally, the committee has a quarter of a million dollars to spend on this investigation) are the Federal Trade Commission, the Civil Aeronautics Board, the Securities & Exchange Commission, the Federal Power Commission, and the Atomic Energy Commission.

If you wanted to take a politically slanted view, however, it might be said that the Democratic majority of the House would like to put the administration in the hole along about the time the congressional election campaigns start getting hot next year. This could be done by means of "disclosures" indicating that big business had taken control of the very federal commissions which are supposed to regulate them. Needless to say, the administration is not too happy about this congressional digging around the regulatory boards during a politically sensitive season.

The subcommittee will be headed by a staunch Missouri Democrat, Rep. Morgan M. Moulder. But the Republican minority has an able watchdog on the committee in the person of Rep. Joseph P. O'Hara of Minnesota. Furthermore, all Democrats do not see alike on the alleged defections of the regulatory commissions. One very powerful Democrat who will have charge of the subcommittee's purse strings is Rep. Oren Harris of Arkansas. He is chairman of the House Interstate and Foreign Commerce Committee.

One of the charges made against the Federal Power Commission, for example, is that it has been unduly solicitous about the welfare of natural gas producers because the FPC favors the controversial bill which would exempt such producers, in effect, from the control of the FPC.

Such a bill was vetoed last year by President Eisenhower because of alleged irregularities and lobbying in the Senate. But Ike has said he would sign another bill of the same nature if Congress passed it. Another such bill has been introduced. The two authors of that bill are none other than Representatives Harris and O'Hara. So we can see that the anti-business wing of the Democratic majority is not going to get very far trying to plaster a gas business label on the FPC—not with Harris and O'Hara sitting on the subcommittee.

There are other things which will divide the subcommittee not strictly along party lines. Of course it is no secret that President Eisenhower has gradually manned these commissions—through his appointive power—by people of his own choice. Every President does that. During the regimes of the last President Roosevelt the majority of all these commissions were ultra-New Dealish whether they called themselves Democrats, Republicans, or Independents.

Now that President Eisenhower has been in office four and a half years, the complexion of these commissions is changing and their increasing quarrels with the Democratic Congress over policy matters should not be surprising.

Another and less known feature of this conflict is the fact that many of the commissioners are at odds with their own staffs. Commission staff people are protected by civil service

and generally have a longer tenure. Most of them went to work for the commissions during the regimes of Roosevelt and Truman and they are still there. This explains why members of the FCC, the FPC, and the SEC have considerable policy differences with their own staff members. In fact, much of the subcommittee's "evidence" against the commissioners will probably be supplied, directly or indirectly, by disgruntled underlings.

This condition of hold-over staff personnel being at odds with their superiors, is not limited to the regulatory commissions by any means. It can be found in most any government department. Evidence of it can also be found in gossip columns and other places where stories about the "boss"—inevitably unfavorable—are being leaked out in the usual clandestine manner under which such political columnists operate.

There is no practical way to correct such conflict between the executive and the congressional branches of our government, especially when the people have elected both with divided political faith. There are some who even say it is a good thing—part of the system of checks and balances. And if the Republicans were in office long enough, even the complexion of the various staffs would gradually change, just as it did during the 20-year control by their political opposition.

Whether it is a good thing or not, it looks as if the FCC and the other commissions are in for a hard time. The Subcommittee on Legislative Oversight (something *really* should be done about that name) had a meeting this week to decide on a staff. By next fall, the dirt ought to fly. And maybe some dead cats, too.

Pay-as-you-see TV

Typical of policy conflict between the FCC and Congress, and the kind of thing that FCC members may be called on the carpet about, is the argument over subscription television. Telephone companies should be interested in this matter because of the various arrangements proposed for the setup when it is authorized by the FCC on a commercial basis.

Chairman Doerfer of the FCC announced on July 19 that the commission had cleared the way for a commercial trial of this pay-as-you-see TV some time in the future. The commission outlined its views in answer to a letter from Representative Celler (D., N. Y.), chairman of the House Judiciary Committee.

Celler had asked the FCC to take no action on subscription television until Congress has had a chance to pass on the subject.

"We agree," Chairman Doerfer wrote, "that Congress could reach the conclusion that use of radio frequencies for a subscription television service should be prohibited." However, he added, "in the absence of congressional action on the amendments of existing law, the commission is obligated to abide by the provisions of the Communications Act and the Administrative Procedure Act. In accordance we believe it is the commission's duty to make some disposition of the pending petitions."

The FCC pointed out that it has received the views it solicited on its proposals to conduct a "significant test" of subscription television. It said the deadline for replies to pay television proposals was July 22.

FCC Chairman Doerfer also told Representative Celler that the commission would "carefully take into account" his views on subscription TV. Celler has introduced a bill to prohibit a charge for broadcasts.

The FCC also enclosed a "memorandum of law" to Celler summarizing its conclusions that it has the necessary legal power to authorize a test of toll television. Despite all this, the commission is expected to take months before deciding when and where to stage a trial run of pay-as-you-see television.

Another member of the House Judiciary Committee tangled with Committee Chairman Celler on the issue. He is Rep. Frank Chelf (D., Ky.), who agreed that the FCC has full legal authority to hold field trials of pay-as-you-see TV. He wrote a letter to FCC Chairman Doerfer saying he would back him up. "If pay-as-you-see television is good, the people will demand it. If it is bad, nobody could give it to them," said Chelf in urging the FCC to go ahead with the necessary tests.

One of the witnesses before a subcommittee of the House Judiciary Committee was Matthew Fox, president of Skiatron TV, Inc. Fox is negotiating for TV rights in San Francisco and Los Angeles. Among other things, he wants to set up a subscription television system to carry the games of the Brooklyn Dodgers and the New York Giants over closed-circuit TV. Fox said that the Dodgers and Giants proposals would apply whether the teams stayed at their present locations or moved to Los Angeles or San Francisco as proposed in pending negotiations for switching the ball clubs.

Fox challenged some estimates of the costs involved in installing the Skiatron system on the West Coast. He estimated it would cost 6 million dollars to lay wires to serve one million TV homes in the greater San Francisco area and 12 million dollars for wires serving 2 million TV homes in Los Angeles county. This does not include the cost of hooking each home to the system. Fox said there would be no installation charge, but this cost would be recovered through a $3.00 a month basic charge for each home on the network.

Under the Skiatron system, a network of TV wires would be spread over a city using existing utility poles or conduits. A home would be connected to

(Please turn to page 46)

Welch Named Bar Officer

Announcement was made in New York City on July 18 that Francis X. Welch had been unanimously elected to be continuing secretary of the Section of Public Utility Law of the American Bar Association. Announcement of new officers of the Section of Public Utility Law was made by the retiring chairman, Donald C. Power, president of the General Telephone Corp. The members of the section departed from New York on that date to continue sessions of its 1957 meeting as well as the 80th annual convention of the American Bar Association in London, England, July 25 to 30.

In addition to being Washington editor for TELEPHONY, Mr. Welch has been a member of the District of Columbia bar since 1927. He is also editor of *Public Utilities Fortnightly*, the national magazine devoted to public utility regulation, and has written a number of books and many articles on the subject of public utility law. He makes his home at Deep Cove, Churchton, Md.

Other new officers of the Section of Public Utility Law of the American Bar Association are Randall J. LeBoeuf Jr., of New York, chairman; John B. Prizer, vice president and general counsel for the Pennsylvania Railroad, of Philadelphia, vice chairman. Stephen H. Fletcher, vice president and general counsel of the Chesapeake & Potomac Telephone Co. of Washington, D. C., was among four new members named to the section's council for the coming year.

THE Plant Man's Notebook

BY RAY BLAIN, TECHNICAL EDITORIAL DIRECTOR

WE HAVE received the following comments from James R. Wylie, of Belvidere, Ill., which would seem to indicate that he is not in accord with our contention that the 2L-5N number should be replaced by a straight seven digits. He stated:

"Your reference in the May 25 'Plant Man's Notebook' to 'the word prefix to telephone numbers' implies a dispensable status to the office code which does not hold true except in the smallest exchanges.

"If all three digits of the office code are absorbed in the local and incoming toll switch trains, the office code may truly be considered a 'prefix'—three digits grafted onto the station number in order to provide uniform directory numbers for DDD (Direct Distance Dialing).

"In all other cases, however, the office code is an integral part of the directory number.

"To suggest that central office names be discontinued because the practice is prevalent of ignoring them in graphic advertising is similar to suggesting that since poor spelling is prevalent we should all discontinue spelling correctly.

"A properly spoken 2-5 number, with the pause placed between the office code and the station number, has a cadence which makes it much easier to remember than any string of seven numerals.

"In graphic transmission, form is subordinate to legibility, but telephony is an aural medium, and its numbering scheme must be adapted for convenient aural perception and easy recall.

"Central office names have been carried over from the old manual days because they exhibit the same superiority to numerals then as now. Although manual central offices could have been assigned numerical designations, Adams 7184 was easier to perceive and recall than 2-3-7-1-8-4 in 1927, just as ADams 9-7184 is easier to perceive and recall than 2-3-9-7-1-8-4 30 years later.

"Not only is the central office name of definite use to many people who may dial the number directly, since they must first determine the number (and the process of determination may very well be aural), but also it is very nearly indispensable in operator handled traffic.

"The business concern which prints its number as 'AD-9-7184' in its advertising does a distinct disservice to customers who reside outside its exchange area.

"The entire value of the central office name is thrown away and turned into a disadvantage—all for the sake of the small space occupied by the 'ams.' The customer quotes to his operator the information which appears in the ad. 'Did you say AD-7 or JE7,' she asks. 'A-able D-dog seven,' he explains, and so he has to go back to a word form of expression anyway.

"Since the entire DDD numbering plan has been built around the universal adoption of the 2-5 form of directory numbers, and more exchanges are adopting them every day, it seems certain that office names are here to stay, and for very good reason.

"While it is true that there are people outside the industry who misuse such numbers, I think it is up to us tactfully to lick 'em, not join 'em!"

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We understand that the Bell System's first commercial in-dialing PBX was placed in service on Feb. 22, 1957 for the Boeing Airplane Co. in Renton, near Seattle, Wash. This installation is actually No. 1 step-by-step central office equipment. This system consists of 2200 lines with 1253 in use at the time of cut-over.

A new central office name, Broadway, was assigned to the PBX. In-dialing is now accomplished by dialing BR, plus the four-digit extension number. It is understood that this will be changed slightly later when Renton and nearby Seattle go 2L-5N.

It is interesting to note that on the first day following the cut-over, 4490 in-dialed calls were received which represented 72 per cent of the total incoming services.

Then on the second day, the in-dialed calls increased to 79 per cent. At the end of a two-week period, the in-dialed calls were running about 86 per cent of the total in-calls.

As a result of the high percentage of in-calls being completed by dial, the busy hour switchboard traffic is normally handled by one operator.

The Boeing company operates several plants with about 48,500 employes in the Seattle area. The new facilities coordinate the Boeing numbering plan with the greater Seattle extended service.

It is understood that the Boeing company is extremely pleased with its improved and speeded up telephone service.

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A liquid rubber product, now available, can be sprayed or painted on electrical equipment to provide insulation. When this product dries, it forms a real rubber coating that prevents arcing between components.

It can also be used to weatherproof and rustproof antenna terminals, wires and mounts.

In addition, this product resists salt and sea air, and many kinds of acids. It also withstands heat up to 200° F., and 20° below zero.

Solvents or other chemicals are not necessary for thinning, only warm water. This product is available in green, grey, red, black and transparent.

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We have often wondered why it is necessary for the operator at the called station on a toll call to invariably inquire, "Is the call paid?"

Would not it prove much easier and certainly save time if the calling operator would simply state, "I have a paid call from Podunk for Mr. Blank"?

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It is reported that over 66,000 channel miles in the Bell System's intercity television network is now arranged for the transmission of color programs. There are over 76,000 miles in the entire network.

today's

Highlights

of finance-taxes-business trends

by Willard F. Stanley

BREATHING SPELL FOR LONG TERM MONEY COSTS: When our last column was released, long-term money costs had just made new highs for several decades, and we said then: "And the end is not yet." The following two weeks were to see money rates for utility funded debt rise substantially higher, symbolized by the 4.85 per cent yield at which Southern Bell Telephone & Telegraph Co. debt was offered on June 19, followed by a 6 per cent offering yield on first mortgage bonds of Puget Sound Power & Light Co. (June 26)—a rate easily piercing all previous highs for this type of security in this generation.

But, then a reaction set in. The new securities moved out well at these unprecedentedly high yields and as the underwriters' inventory cupboards become barer, a better demand developed for ensuing issues. By July 11, the Southern Bell issue had firmed a fifth of 1 per cent per annum in yield, the then current bid being at a 4.65 per cent rate, while the Puget Sound bonds were bid on a basis around 5.85 per cent. This improvement in bond prices was reflected in lower yields for subsequent new utility funded debt offerings.

The recent firming of bond prices and consequent reduction in funded debt yields is exemplified by the Wall Street Journal tabulation of new utility issues. Eighteen such issues, on July 11, showed an average yield at then bid prices nine decimals (.09 per cent per annum) lower than the average yields on their original offering prices. Yields dropped (in most cases considerably) on 14 of the 18 new issues reported, and were higher on only three, with one unchanged, the latter four representing issues brought to market very recently, after the rally in the bond market had already occurred.

So much for the records, but what about things to come; and what should utility managements do, if they need funded debt money in the near future? The schedule of utility funded debt offerings remains heavy for July—about 150 million dollars. In August, however, present schedules call only for two issues, aggregating 108 million dollars. Then in September the scheduled utility debt offerings rise again to a total of nearly 250 million dollars. From July 25 to Aug. 20 (a period of nearly four weeks) only one issue (of 18 million dollars) is now scheduled for offering by a utility. All this reflects the tabulations of the Investment Dealers' Digest (July 8 issue).

(Please turn to page 22)

Mr. Stanley, formerly financial vice president of Southwestern Public Service Co., an electric utility with over 160 million dollars in assets, is president of Corporate Services, Inc. of New York City. He is a member of Controllers Institute of America and New York Society of Security Analysts. He serves on three committees of the Controllers Institute having to do with federal taxation, social security and finance management. His articles are appearing once a month in TELEPHONY.

Compact Burroughs Desk Accounting Machine adapts to any small business bookkeeping system

A thrifty swifty, that's the Burroughs Director—the compact, automatic accounting machine keyed to the small and medium-sized business budget.

Wait till you see its low, low price tag. And all those "big machine" features—fast front feed, short-cut keyboard, automatic dates, add, non-add, subtract and carriage return. Reverse entry key.

Practical? You bet! Economical? Emphatically! Why not call our nearby branch office for the complete story, plus a free trial demonstration right in your own office. There's no obligation, of course. Burroughs Corporation, Detroit 32, Michigan.

BURROUGHS DIRECTOR Accounting Machine

"Burroughs"—Reg. TM.

So those planning funded debt financing in the next few months might well find the above-mentioned four week period favorable from a supply and demand standpoint. It would appear wise for some of the issuers to rearrange their offering dates either forward or backward to endeavor to maintain a more even flow of bonds into the new issue market. This would avoid the sparse offerings of April, which it now seems are likely to be duplicated in August under present schedules.

As for the future of long-term interest rates—apart from temporary strength or weakness in the bond market due to sparse or excessive demands—it still remains largely an enigma. The demand for funded debt money from all sources—industrials, utilities and non-taxable governmental agencies—seems unlikely to show marked shrinkage in the near future. And, while a heavy flow of these securities to market continues, with fairly static supply of funds, drastic reduction in interest rates seems improbable. We must remember, however, that 1953 demonstrated how quickly these rates could fall, once conditions change—although the demands for funds faced currently is far more continuous and heavy than those encountered four years ago.

Additional pressure for funds in the early Fall might cancel the recent rally and even create new peak interest yields for new bond offerings. With business activity remaining high and creeping inflation still widely feared, a change in Federal Reserve policy which would prove helpful to funded debt issuers appears remote.

As mentioned in last month's column, it seems wise for utilities considering prompt issuance of funded debt to explore the possibility of switching temporarily from sale of funded debt to a sale of common stock—where a sale of common is desirable in the not too distant future. After brief weakness, the utility equity market has firmed again and the yields and price-earnings ratios remain favorable.

Recent action of the Federal Power Commission in refusing to permit Puget Sound to agree to a five-year prohibition on redemption of new bond issue may be followed by similar action by state commissions, although this should not be taken for granted. Until such action occurs, however, issuers will have this choice to make in offering funded debt. The possibility of severe future loss from this prohibition, if it should operate to prevent economic redemption for a large number of years, should prevent such a prohibition from being given lightly. Only where the lower interest rate thus obtainable on the new issue is of prime importance to current earnings—to maintain existing dividend rate for instance—would it seem wise to agree to this prohibition without most studious consideration and after obtaining the best procurable financial advice.

* * * *

SUMMER SPLURGE IN STOCKS: After the mild technical mid-June reaction, mentioned in last month's column, which cancelled a part of the Spring rise, stocks promptly reversed their trend and have now mounted to all time highs on most averages. This is true of the New York Times 50 combined stock average, which at July 19 reflects an increase of 2 per cent over the Dec. 31, 1956 close, compared with an average 1 per cent below that close at June 21. A "see-saw" in stock averages seems still the logical expectation for at least several months. But, while this is true of the averages, individual issues will continue (as always) to move in both directions. Selectivity this year has been greater than usual, often caused by rapid price swings attributable to rumors or denials of mergers or other types of property acquisition, and to differences between anticipated and actual earnings.

GENERAL: Once more the importance of the unique situation in the utility bond market has consumed so much space that discussion of tax developments and further discussion of the advantage to investors from common stocks of utilities a substantial portion of whose dividends are non-taxable, must be deferred again; we hope only until "our next."

TELEPHONY'S ELECTRONICS SECTION

BY HAROLD B. McKAY, ELECTRONICS EDITOR

DATA CIRCUITS CONCERN MANAGEMENT

A SERIES of articles on the subject of data transmission is being prepared for future publication in TELEPHONY. A number of people have been interviewed in order to obtain facts for the articles. Some rather startling opinions have been obtained, which have been frankly critical of some telephone company managements.

Some users condemn telephone companies for not keeping up with electronic developments, and for not being able to supply circuits for modern communication needs. It was declared by some that the companies just cannot furnish circuits good enough for data handling, and haven't the equipment to test or rehabilitate their plant.

The alleged 3,000-cycle bandwidth that users of telephone facilities expect, turn out to be something else. Indeed, some such circuits will only transmit 2,300 cycles. To the data customers' protest, some companies have replied that they don't guarantee a 3,000-cycle circuit, but they do furnish good voice communication. This, however, may not be good enough service.

For instance, in some areas it has been found that not a single circuit existed which was good enough for a SAGE transmission.

In the meantime, the Federal Communications Commission has been holding hearings in the matter of granting microwave frequencies to private users. The United States Independent Telephone Association, American Telephone & Telegraph Co., Western Union Telegraph Co., and others are opposing such licensing, contending that private users should not have their own facilities if common carrier service is available.

But what if a telephone company cannot supply the service required? It is running the risk of losing good revenue prospects to private operators, to larger telephone companies, or to the armed services, which might be expected to build in their own SAGE circuits if a telephone company can't do it.

One oil company executive views the telephone company methods with scorn. He cited an example where the oil company needed a circuit into a location where a well was to be drilled. The telephone company was so slow in doing anything about the request that the oil company built in their own line, drilled a duster and moved out again before the telephone company even engineered the route!

These comments are made not in the spirit of criticism of telephone companies, but rather they are made to impress upon the companies and their management and personnel the importance of widening their knowledge of electronic developments which are affecting the telephone business more and more every day.

FIRST TELEVISION

MUCH HAS been printed this year about the anniversary of the first television broadcast made on Apr. 7, 1927 which starred Herbert Hoover and Walter Gifford, AT&T president, who made a telephone call between Washington and New York. However, reports the San Francisco *Chronicle*, before the historic conversation began, the very first image on the screen was a Washington, D. C., telephone operator named Edna May Horner, who established the connection. Miss Horner, whose image was therefore the first to be seen on inter-city television, is now married and lives in Washington.

ELECTRONIC SWITCHING

ONE OF the stand-bys for electronic switching systems is the gas filled tube. There is a whole family of such devices, ranging from tiny neon lamps to elaborate multi-element tubes which have as many electrodes as a rotary switch has contacts. The neon lamp or tube has significant operating properties which make it a natural for switching applications. First, a tube like this in a circuit presents an open condition while the voltage on it is below the firing point.

Once the voltage is raised enough to make the tube light up or "fire," it will sustain its conductance at a lower voltage. Thus it is not unlike a relay which will operate when the voltage applied to its winding reaches a certain point. Another feature of the gas tube is that it also can act as a memory device, because once fired, it remains that way until purposely extinguished.

A further feature is that a current gain is manifested in the fact that only a few microamperes are necessary to trigger the tube into conductance, but several millamperes will flow once the gas in the tube ionizes.

The Bell System is actively engaged in developing equipment of this sort and the May, 1957 issue of the *Bell System Technical Journal* describes a switching tube made especially for talking paths. The tube would fire and sustain on dc on which the voice currents would be superimposed. Preliminary models have been built which have been

placed in operation for periods of time which would be equivalent to 20 to 40 years of service in intermittent switching operations.

IGNITION SYSTEM

ELECTRONIC switching developments are not confined to the telephone industry. Automobile manufacturers and users may benefit from a new development which applies electronics to the ignition system of a car, thus providing more perfect and trouble free operation.

A patent (No. 2,791,724) assigned to the Hupp Corp. of Cleveland, describes both a spark coil and distributor for a gasoline engine which are electronic in operation. Neither primary "points" or distributor contacts are needed. The primary winding of the induction coil is pulsed by means of a gas switching tube circuit which is triggered by a beam of light. The light comes from a source which is surrounded by a slotted shutter which turns with the engine.

The shutter permits the beam of light to fall periodically on a photocell which triggers the electronic circuit, just as the points on a regular ignition system send pulses through the coil primary.

The secondary of the coil is connected to a distributor which consists of a photocell for each spark plug wire. The rotating shutter, which turns around like the light in a lighthouse, successively lets the beam of light fall on each photocell. At the same time the photocell in the primary circuit of the coil is illuminated. The primary is pulsed and a high voltage surge goes through the photocell in the distributor which has the light beam on it, and the spark plug fires—all with only a moving beam of light and no contacts to clean or burn off.

PARTY LINES

STILL another application of the versatile gas tube is seen in its use on party-line telephone bells. The system, which uses a gas tube in the subset in series with the bell has been in use for a long time, but something new has been developed. In former practice, the tube in series with the bell acted as an open circuit when ringing was not taking place, thus reducing inductive interference and hum by removing the grounded bell from the line.

In ringing, a battery was used in series with the ringing machine to raise the voltage on the tube to above the firing point. By reversing the connections to one of the subset tubes, full selective ringing could be accomplished. Because the tube will only fire when the correct polarity is applied, two ringing batteries were used in the office, one poled each way. The operator, to ring the correct party, merely operated the key which would supply ringing power in series with either positive or negative battery as required.

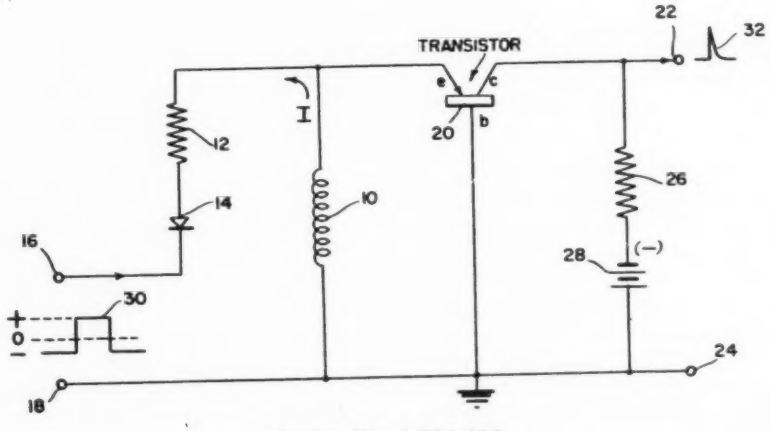
This meant the use of two ringing batteries, so a patent (No. 2,790,851) has been issued to William Berch and assigned to General Dynamics Corp. which provides for a rectifier system on the output of the ringing machine.

Two outputs are provided, each of which goes to a dry plate rectifier. One puts out pulsating voltage which is positive to ground and the other negative to ground. Each of these two outputs goes to a switchboard key, which can be operated in either direction to select the desired polarity. This pulsating current will trigger the correct tube in the subset wanted and ring the bell. No ringing battery is required with the system.

PULSE SHARPENING

EVEN before electronic switching becomes a part of telephone plant, the matter of pulse shaping will concern telephone companies. Pulse shaping circuits have been in common use on teletype circuits, and the increased use of data transmission systems may require more of this.

Patent No. 2,793,303, assigned to International Business Machines by Harold Fleisher, is one of many recently developed circuits for changing the shape of a pulse. In some cases of IBM operation a received series of square wave pulses may be difficult to separate because one may overlap the other slightly. The circuit shown in the drawing is designed to offset this situation by changing the shape of the received pulse to a sharp narrow spike, thus making it possible to separate it from others more easily.



Patent No. 2,793,303

This pulse sharpening is accomplished in the following manner: With no pulse present, the current coming in from the line is negative at terminal 16 and positive at terminal 18 (ground) as suggested by the wave shape at 30. This means that the incoming "no signal" level is below ground potential.

In this condition the current will flow through the diode 14, resistance 12 and inductance 10. When the square pulse arrives, terminal 16 is driven positive. This also puts a reverse current condition on the diode 14 which stops conducting. This acts just like a switch, in fact it may be regarded as an electronic switch that is suddenly opened.

When it is opened, the inductance discharges, producing a back voltage opposite to the voltage which charged it. This makes the top end of the coil positive, and this is the correct polarity for current to enter the emitter (e) of the transistor 20. This discharge of the coil is at a rate which is dependent upon the value of the inductance in henries divided by the forward resistance of the transistor in ohms. For an inductance of 1 mh and a resistance of about 100 ohms, a discharge time of about 10 microseconds could be expected. This would give an output pulse which looks like the one shown as 32.

Other typical values for this circuit are Resistance 12—1,000 ohms, resistor 26—10,000 ohms, diode 14 —type 1N34, battery 28—22.5 volts, transistor—Type A using n-type germanium.

PAYSTATION SYSTEM

EVEN the public pay telephone cannot escape the electronic age. The coin mechanism in a pay instrument presents some problems because of the relatively large amount of power needed to collect or refund the coins. The current requirements are even more when a large number of coins on a toll call must be handled.

In addition to the mechanical aspects, there is the ethical question posed by the customer who needs the police or fire department in a hurry and doesn't have the necessary coins.

A new invention by Clarence Lomax, and assigned to the General Telephone Laboratories makes a good approach to both of these problems. The patent (No. 2,791,634) covers improvement in both the central office and station apparatus. It permits dialing a certain number of digits for emergency calls without the payment of a coin.

By means of cold cathode switching tubes in the instrument, more current for operating the coin relay is made available. A double wound magnet is used, with two series neon lamps. The connection is such that power can be delivered to the magnet from both sides of the line instead of only one, in order to obtain increased current. The neon tubes also prevent the magnet from fluttering under dialing impulses, and a special cut-off contact in the dial accomplishes the same purpose on pre-pay telephones.

Other features embodied in the invention include means for repeatedly operating the magnet if the coins are not disposed of on the first attempt, and for testing the line after each attempt.

SECRECY SYSTEM

METHODS by which radio-telephone messages can be sent in secrecy have long been a challenge to inventors, and many systems have been used by telephone companies and military authorities.

A recent development is found in patent No. 2,792,493, recently assigned to Westinghouse Electric Corp. It provides for two modulators both fed from the same carrier generator through a "magic tee" connection. One is modulated with the message, the other is a noise modulator. The magic tee is an intersection of two wave guides with four branches. Its action is such that if oscillations are fed into the two input branches, one output branch will contain the vector sum of the two inputs and the other output branch will contain the vector difference of the two inputs. The two resulting waves can be sent to a receiver which has a similar magic tee which will unscramble the message sending the signal into a demodulator and the noise into a dry load.

A listener without these facilities would find the signal obscured by the noise.

MILLIVOLTMETER

WHEN a vacuum tube voltmeter uses transistors instead of tubes, you have to give it a new name. The Fisher Research Laboratory of Palo Alto, Cal., has just produced a new model which is called the VT-3 ac millivoltmeter.

It has ranges of from 0 to .001 volts to a top scale of 300 volts, or from minus 60 dbm to plus 50 dbm. This is the same range as vacuum tube voltmeters usually used by telephone companies in transmission, repeater and carrier work, so one of these instruments was borrowed and tried out in a telephone office.

Tests on a carrier system showed that it was more accurate than the vacuum tube voltmeter then in use by the telephone company. Because the new instrument is completely battery operated and therefore had no connection to the ac line, no ground was present on the case of the instrument which would have interfered with the telephone equipment, which appeared to be an important advantage.

However, in cases where the most sensitive scales were used, grounding of the instrument case became necessary to reduce pick-up of stray ac from nearby wiring. So sensitive was the —60bdm scale that the volt-

age generated by human heartbeats could be read by simply holding one of the probes against the chest and the other in the left hand. The heartbeats showed clearly on the instrument and read 1½ db from diastole to systole. (Don't try this with an instrument which might have 110 volts on the probes.)

The instrument uses a six transistor amplifier but also uses one hearing aid type tube in order to get a high impedance input from the probe. By going into the grid of a tube, a 22-megohm input is possible. The use of transistors in the remainder of the amplifier provide a freedom from tube aging and hence contribute to the stability of the instrument. They also permit operation from self-contained mercury batteries which will give 400 hours of continuous operation. This could be a great advantage in servicing repeaters or other pole-top use where commercial power is not available. Further, the instrument is small and light enough to be readily used in remote location.

Ordinarily meters are assumed to have their greatest accuracy when used on the scale which will bring the reading closest to the center of the dial. It is regarded as a mark of merit by some if the same reading can be obtained on two or more ranges of the instrument. Thus, if a —10db power was being measured, it should show —10db with the range switch on the zero position, and it should read zero when the range is on the —10db scale. This is very useful in telephone carrier work, such as is slope adjustments where more than 10db difference exists between channels.

However, many instruments will not meet this test, producing errors when the range switch is set in the position where the lowest reading results. The Fisher instrument was tested in a carrier system on each range for this feature as was found to track perfectly.

The millivoltmeter has a 2 per cent accuracy from 10 cycles to 600 kilocycles which amply covers telephone requirements. In addition it is usable as a null detector and amplifier from ½ cycle to 4 megacycles.

INDICATOR TUBE

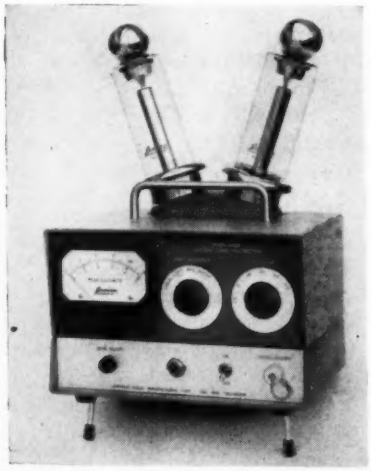
ONE OF the disadvantages of a tube as compared to a relay, at least from a technician's viewpoint, is that you can't tell by the looks of it whether it is working or not. Maybe that's what the Amperex Electronic Corp. was thinking of when they produced their new Type 6977 indicator triode. This is a subminiature tube designed for use in visually monitoring transistorized computers.

Main feature is a fluorescent anode. It gives a bright blue-green indication when the control grid is at zero potential. A 3½ volt dc voltage will cut off the plate current and the light.

NEW BOOKLET

"THIS is Your Plant Department" is the title of a delightful little booklet published by Pacific Telephone & Telegraph Co. Written in a crisp, witty style the 23-page story is designed to acquaint workers in other departments with the function of the plant. Primarily intended for employes booklet rack distribution, it is good reading for anyone in the telephone business, but is of particular value to new employes.

An earlier booklet covered the functions of the traffic department in similar style. You can get a copy of each by writing to the Information Manager, Pacific Telephone & Telegraph Co., 140 New Montgomery St., Room 621, San Francisco 5, Cal.



This isn't a part off of a space ship. It's a vacuum-tube voltmeter developed by the Jennings Radio Mfg. Co., of San Jose, Cal. It will measure up to 100,000 volts.

ELECTRONIC NOTES

FREQUENCY measurements and how to make them is the subject of Data File 111 issued by the Beckman Berkeley Division, 2200 Wright Ave., Richmond, Cal. This booklet describes a wide range of applications of Beckman counting instruments in fields which range from telemeter sub-carriers to filters. Methods of calibrating less accurate frequency measuring equipment is covered and provisions for establishing secondary frequency standards are described.

You can get a copy of this interesting booklet by writing to Department 7276 at the above address.

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ELECTRICAL ENGINEERING CIRCUITS, a new textbook by Hugh Hildreth Skilling, was published in March by John Wiley & Sons.

Modern trends in electrical engineering thought, as emphasized by Dr. Skilling, lead to his inclusion of commonly neglected topics. Among the major concepts stressed here are network theorems, loop and node equations of networks, locus curves and other graphical methods, resonance of high-Q cir-

cuits, impedance and admittance functions, poles and zeros in the complex frequency plane, the transform concept, and the Laplace transformation.

Special attention is also devoted to the algebra of complex quantities, following the line of thought of mathematicians. These topics, though new and somewhat unusual, are nevertheless built into the solid traditional material, augmenting it for practical use according to the publishers.

Dr. Skilling is professor of electrical engineering and head of that department at Stanford University.

"Electrical Engineering Circuits" contains 724 pages and is priced at $8.75. It may be purchased from TELEPHONY.

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A NEW sniffer for detecting combustible gas leaks has been made available by the Johnson-Williams Corp. of Park Blvd., Palo Alto, Cal. The new unit, which weighs only five pounds, reads in terms of explosive limits, and in percentage of natural gas. Two ranges are built into the instrument, which operates on the platinum filaments principle. It is useful for detecting gas in manholes, pipe-lines, pumps, etc. It is called the "Gas Pointer" and additional information can be obtained from the manufacturer.

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THE *General Telephone Technical Journal* is the new name for the *Automatic Electric Technical Journal* which has been known to telephone people for many years. The name change was occasioned by AE's affiliation with General Telephone Corp., but is also appropriate in that the magazine is devoted to all three phases of the industry—research, manufacturing and operation. The current issue has the final series of articles on the FW-1 Intertoll Switching System. The publications address is General Telephone Laboratories, Northlake, Ill.

•

A POWER supply for mobile radio, which uses transistors instead of a vibrator for the receiver portion has been developed by General Electric. It is expected to reduce maintenance expense for fleet users.

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at your FINGERTIPS

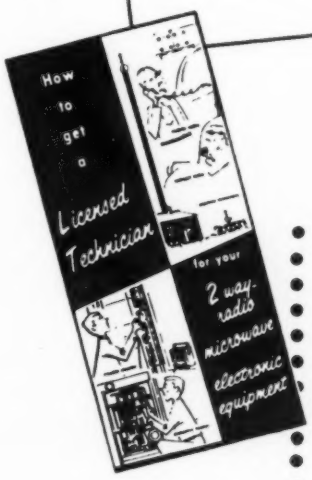
for mobile radio... microwave...carrier ...repeaters, etc.

HOW TO TRAIN YOUR TECHNICIANS FOR ELECTRONIC MAINTENANCE

Here is a proven plan for providing training in electronics for your present technical staff. The great development of electronic devices for use in telephony makes it imperative to mentally "re-tool" your men.

Many telephone companies have enrolled their technicians for training. The West Coast Telephone Company selected our Employers' Plan for training their men. One group has completed its training and a second group is well under way. In less than a year they have acquired a group of experienced telephone technicians who know electronics.

For full details on our Employers' Plan send for a free copy of our illustrated booklet.



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New Yorkers Participate in Outstanding Convention Program

By Dan S. Fargo

IT SEEMED like the proverbial "Old Home Week," both for the state's telephone people and the numerous visitors from out-of-state, as they converged on Scaroon Manor in the Adirondack Mountains for the 35th annual convention of the New York State Telephone Association on July 17, 18 and 19. At least to this reporter, the spirit of camaraderie generated among the 453 delegates seemed unparalleled.

The personal touch displayed by Executive Secretary Hamilton A. Cunningham in handling convention proceedings and the clear-through excellence of the program of speakers also were notable.

C. Ray Lloyd, of Manlius, association president, presided at the opening session. In his talk, "Expansion—Are You Dedicated to It or Doomed by It?", Mr. Lloyd told how abnormal growth in demand for telephone service had resulted in his company's providing for little more than three years' expansion rather than the 10 years they thought they were providing for.

Discussing increased usage of the telephone, Mr. Lloyd cited the following experience:

"Peg count studies show that telephone users in a dial exchange average one call per day more than in a manual exchange. Average figures which I have been able to obtain show 4.7 calls per station per day in a manual exchange and 5.7 calls per day in a dial exchange of practically the same size.

"Mr. Hart of the Cazenovia Telephone Corp., who recently converted Cazenovia to dial, tells me that they had even a greater increase which amounted to two calls per station per day. The increase was from 3.5 to 5.5 calls per station per day.

"Another type of service which creates an increase in traffic is Extended Area Service. Statistics show that traffic increases seven times when a 15-cent toll charge is abandoned and

(Please turn to page 32)

Officers and directors, New York State Telephone Association for 1957-58. Seated (L. to R.): Executive Secretary Hamilton A. Cunningham, Secretary-Assistant Treasurer George S. Beckwith, President C. Ray Lloyd, Vice President Albert N. Seward, Treasurer W. Malcolm Griswold and Don Walker. Standing (L. to R.): Robert Maytum, Fred S. Florance, F. Mark Clark, William A. Seely, R. Parker Sullivan, Sheldon A. Birdsall and Frank D. Fancher.

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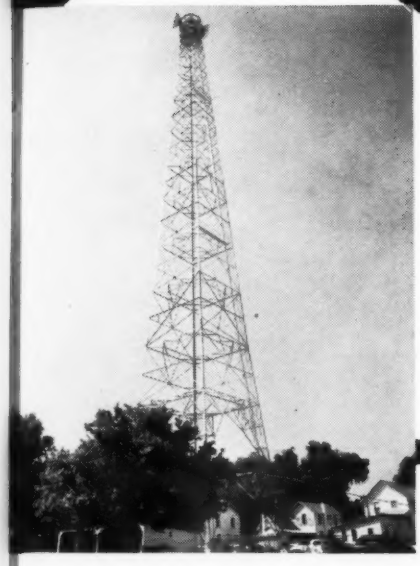

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WINTER GARDEN

Blaw-Knox Towers play major role in expansion of Florida Telephone Corporation

As part of a long-range company expansion and improvement program, subscribers of Florida Telephone Corporation now get better, more reliable toll service . . . thanks to new Microwave Carrier equipment, operating from five Blaw-Knox Microwave Towers. The complete Microwave Carrier System was engineered, furnished and installed by Lenkurt Electric Company and Automatic Electric Sales Corporation.

Constantly improving customer service, while keeping a watchful eye on operating economy, has proved a successful growth formula at this Florida utility. In the last ten years, their total telephones-in-service has jumped from 9,000 to nearly 35,000 and the curve is still going upward. At the present time, the company is operating 18 exchanges and 5 sub-exchanges in 8 counties.

We'd like to help you plan better service for your customers. Chances are Microwave is the best answer to your expansion problems. Write today for our new informative Microwave Tower Booklet 2538 which illustrates Blaw-Knox Microwave Towers and describes Blaw-Knox tower engineering, design, fabrication and erection services.

BLAW-KNOX COMPANY

Blaw-Knox Equipment Division, Pittsburgh 38, Penna.

MICROWAVE TOWERS Blaw-Knox builds guyed and self-supporting type towers for Microwave, AM, FM, TV, Radar, Communications . . . Transmission Towers . . . Special Structures. All custom built to meet your requirements.

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Tell your customers about Leich's 40A PABX. Write for our catalog today!

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ngat Parsons College

(Right) The Parsons College switchboard is equipped with 40 lines, 4 local links, 4 city trunks, and conference service. The capacity of the 40A is 40 lines, 6 local links, and 10 city trunks. Conference service is an optional feature.

Parsons College at Fairfield, Iowa, is a liberal arts school with 26 buildings scattered over its 55 acre campus. Telephone service between many of the buildings and to the main exchange is provided by a Leich 40A PABX switchboard. Here's how this Leich PABX keeps telephone traffic moving without a hitch.

Leich's exclusive keyset turret extends incoming city trunk calls quickly. When the attendant at Parsons receives such a call, she reaches the inside telephone by merely pressing two keyset buttons in sequence.

This simple operation connects the incoming call to a party in any of the school's several buildings which have PABX extensions. Callers are seldom, if ever, kept waiting by a busy attendant.

The folks at Parsons make their inside calls, consultation calls, and outgoing city trunk calls easily, too. They make these calls themselves—without assistance from the turret attendant.

The backbone of the 40A PABX is our Leich all-relay dial switchboard. It's modeled after the famous Leich Dial System. It offers dependable switching in a compact cabinet which will fit in any modern office or plant.

Pictured above, extreme right, is the Parsons College switchboard. Mr. Art Baker (right), District Manager in Fairfield of the United Telephone Co. of Iowa, recommended the Leich 40A PABX to the school. With him is Mr. Gene Savage, Equipment Superintendent of the United Telephone Co. of Iowa. He is shown examining the Leich equipment.

Features Your Customers Will Like

1. Uses Standard Leich telephones.
2. Any non-restricted inside station may call outside without waiting for the attendant.
3. Local links are not tied up on extension dialed calls to city trunks.
4. All the power equipment is contained in the switchboard cabinet.
5. Consultation calls without help from attendant.
6. Restriction of outside calls if desired.
7. Night answering by any telephone.
8. Inside telephones have two digit numbers.

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manufacturers of telephones, switchboards and related apparatus since 1907

replaced by toll-free extended area service.

"This means that an office must be re-engineered to handle the increased traffic created by this service. For example, when our Manlius exchange became a part of the Syracuse extended area network in 1953, the increased toll-free traffic created by this service required a 60 per cent increase in our originating and terminating equipment over that needed prior to the extended area type of service.

"Extended area service created another problem—10-party rural-line service became very poor service. When 10 parties on a line suddenly find themselves capable of dialing not 1800 but 115,000 other subscribers as well as receiving calls from 115,000 telephones on a toll-free basis, the calling rate on that line increases tremendously. We are planning a maximum of five-party rural-line service.

"Once again our plant facilities are being used up at a very fast pace to provide a service which was merely being talked about 10 years ago."

Mr. Lloyd added, "Another drain on our plant facilities comes under the title of special services which use our facilities. Under this category would be fire alarm networks, control circuit networks such as are required by Tennessee Gas Transmission Co., Teletype, power company control circuits to their sub-stations, and radio broadcast loops."

In his full analysis of the expansion problem, Mr. Lloyd, in addition to plant, also covered commercial, personnel and financial expansion. Reminding his listeners that it behooves them to sell stock to their own subscribers, he said that the service provided and the public relations of a company determine to a large extent the acceptance of bond and stock issues sold locally.

Mr. Cunningham, in his executive secretary's report, mentioned that the directors had been keenly interested in guiding the activities of two special committees—the civil defense committee, headed by Arvid E. Anderson of Jamestown, and the intercompany toll operations committee, chairmanned by President Lloyd. He went on to explain:

"The civil defense committee has met several times with Civil Defense Commission staff personnel and New York Telephone Co. people in shaping the policy and planning for the guidance of local directors of Civil Defense so far as communications facilities and operations are concerned.

"We believe this committee to be as important as any we have, for, through its function, we are able to establish sound planning and reasonable policies by which the local directors are guided and to hold a check-rein upon any run-away, fanciful schemes for communications requirements.

"The importance of this committee was clearly demonstrated, we believe, on May 5 of this year, when some 1500 to 2000 people were evacuated physically from Ward 12 in Binghamton, transported to Deposit, some 30 miles away, actually assigned to homes there for shelter, and fed a good chicken dinner.

In the open-air amphitheater, O. Townsend MacMillan addresses the second session. Seated (left to right): Albert N. Seward of Jamestown, association vice president; Aaron L. Jacoby, commissioner, New York Public Service Commission; Judge John E. Holt-Harris, and Hamilton A. Cunningham, executive secretary.

"Can you imagine the problems—just telephone service problems alone—which would be encountered if 2000 people—evacuees under emotional strain—descended upon you without some plans for handling only the emergency telephone messages?

"I am certain that Fenton Busfield, who operates the Deposit Telephone Co., was thankful for the existence of our committee. It so happens that he is a member of the committee, and was keenly aware of the necessity for long-range planning.

"Let me say that from a telephone function standpoint, the evacuation exercise—EVAC 12—was a complete success. Several members of the committee, Gary Slusher, George Beckwith, Fenton Busfield, of course, and Bill Tumbridge who does such a splendid job as secretary of the committee, and I were in attendance as official observers.

"We submitted a report of our findings to General Huebner and, believe me, we were extremely critical, stressing the necessity for establishing command posts in locations where adequate telephone facilities were already available or for having service facilities installed on a stand-by paid-for basis.

"This is an area in which you can be of great service to your local Civil Defense Director and to yourself in eliminating confusion and trouble in time of emergency. Help him to work out his communications problems—advise him where the most practical command posts, from a telephone standpoint, are located in your area—and help him to determine just how much service he needs to adequately handle an emergency."

The intercompany toll operations committee, which was established about three years ago, continues to meet periodically with representative officials of New York Telephone Co. in an effort to solve problems of a nature which often go beyond the field implied in the committee's name, Mr. Cunningham stated. Of course, toll operations problems have been discussed, too and it is believed a better understanding of the positions of the two segments of the industry has been reached in this area, he said.

"Right now," he continued, "the principal concern of the committee pertains to Extended Area Service (EAS) and in this aspect of telephone operations, the two segments of the industry—Independent and Bell—are in partial agreement. We agree that where there is a demand, such service shall be provided and that it is a joint understanding. The trunk cables shall be provided—or carrying charges thereon paid—to the mid-point between the two exchanges embarking upon the project of providing EAS to the subscriber.

"It works out fine when both the Bell System community and the Independent community involved are each served by a single central exchange office.

"The problem or area of disagreement occurs when a single office exchange wishes to provide EAS involving a large multi-office city served by New York Telephone Co. In such cases, the smaller company is asked to pay, in addition to the cable arrangements mentioned earlier, a surcharge or switching charge of 10 cents per station monthly.

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ABOVE: Part of the crowd filling the meeting room for one New York convention session. LEFT: Outdoor meetings proved a welcome innovation. More people attended the sessions than ever before.

"Your association, the committee and United States Independent Telephone Association and its committees have taken a very firm position opposing this extra charge. The New York Telephone Co. is just as firmly entrenched in its belief that the charge should be levied. A difference of opinion exists —an area of disagreement—not an atmosphere of hostility and both segments continue to work on the problem, both confident that we will come to an amicable, equitable and practical solution."

Mr. Cunningham also reported that a new public relations project was to be presented to the directors for consideration. The project: preparation of a telephone exhibit to be shown during the state fair at Syracuse. He pointed out that, once built, the exhibit could be used again and again at county fairs, local exhibitions and subsequent state fairs.

Mr. Cunningham, in discussing rate of return (which he said never quite reaches 6 per cent), stated it is being approached by interest rates which range up to 5¼ per cent. He said this poses the problem: "What do we do if our sources for borrowings dry up because our earnings picture does not satisfy their requirements?"

His answer: "Effect an improvement in the allowable rate of return. It will be our duty to challenge the regulatory body to again demonstrate their ability to wrestle with a tough problem and evolve an equitable workable solution. Our challenge to you, the operating company, is to help us, by building a good case on sound records."

"Merchandising Is a Philosophy" was the subject of a talk by Donald C. Power, president of General Telephone Corp. and president of the United States Independent Telephone Association. (The talk was presented for Mr. Power, who was not present, by Clyde S. Bailey, executive vice president of the USITA.)

Mr. Power observed that many people, perhaps the majority, still perceive merchandising as "high pressure" selling involving the use of various promotional gimmicks. He then said:

"But this is not merchandising as we see it in the General Telephone System. We feel, rather, that merchandising represents an entirely new operating philosophy and that full acceptance of this concept requires decisive changes in many of our long-standing operating policies and procedures. . . .

"Our viewpoint coincides very closely with the textbook description that defines merchandising as being marketing strategy to get the right product to the right place in the right quantity at the right price at the right time in the right light. . . . In other words then, merchandising embraces the whole process of getting the product from its raw state and into the hands of the consumer who will use it. . . .

"There is really no one rule for success in merchandising, but perhaps the generalization which comes closest to being the best single guide is that management should always take the consumer's point of view and try to find out what he really wants or needs instead of relying on guesswork. Business history is full of product failures and lost sales that can be ascribed to 'management-consumer' disagreement on the merits of a product, but just in case you don't already know . . . the disagreement is ridiculous because the consumer always wins. . . .

"It seems to me that any telephone company, large or small, would find it to their advantage to seriously consider the merchandising philosophy if they don't already believe in it. For it is a philosophy that is the opposition of 'let well enough alone.'

"It sparks adaptability to rapidly changing conditions and opportunities. It feeds on conceptual and imaginative thought. It thrives on the customers' point of view. It gains momentum whenever complacency is destroyed."

Mr. Power explained that "full acceptance of the merchandising concept requires decisive changes in many of our long-standing operating policies and procedures," and went on to say, "Most important, I think, merchandising involves a change from a cost to a profit orientation. Cost concepts are deeply rooted in the telephone mind, and while I don't mean to suggest anything so silly as disregarding cost considerations entirely, the merchandising concept recognizes that cost control is not the only path to better earnings performance.

"There are many situations in which

(Please turn to page 38)

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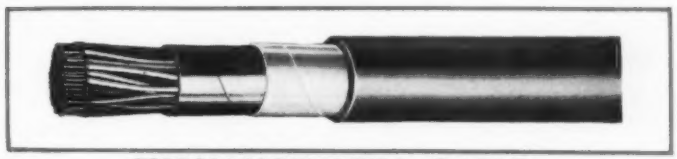
Aerial and Duct are R. E. A. listed. Both Aerial and Duct and Direct Burial Cable utilize polyethylene insulation, aluminum shield and high molecular weight polyethylene jacket for top electrical values. Available in #26, #24, #22, or #19 AWG in 6 through 404 pairs.



EXCHANGE AREA CABLE

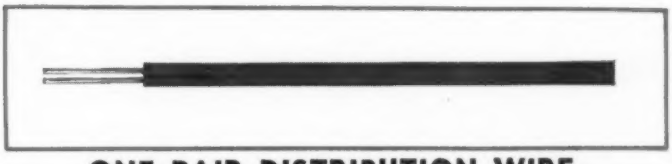
Conductors insulated with high molecular weight polyethylene and jacketed with color coded, weather resistant vinyl provide good transmission values at low cost. Available in either #19 or #22 AWG with 3, 6, 11, or 16 pairs cabled over a high molecular weight polyethylene insulated high strength galvanized support wire.

RURAL DISTRIBUTION WIRE

The rugged weather resistant vinyl insulation over the conductors is fully color coded. This construction, designed for block distribution, serves best where low cost rather than low attenuation is the prime consideration. Available in #24 AWG with 6, 11, or 16 pairs.

URBAN DISTRIBUTION WIRE

A high molecular weight, weather resistant polyethylene extrusion encompasses the parallel conductors. A raised ridge tracer provides polarity identification. The high strength conductors make possible long spans on lateral branches or drop runs. Available in #14 or #12 Copperweld or .083 galvanized steel.



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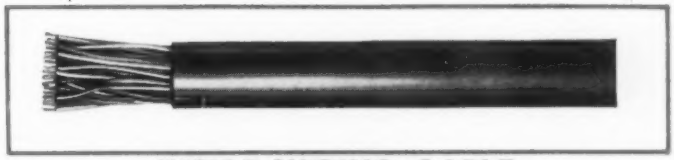

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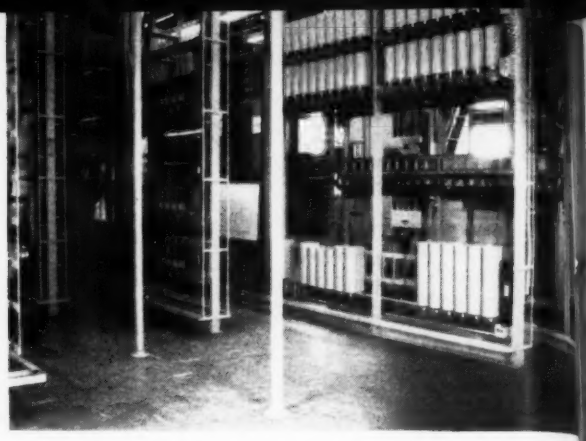
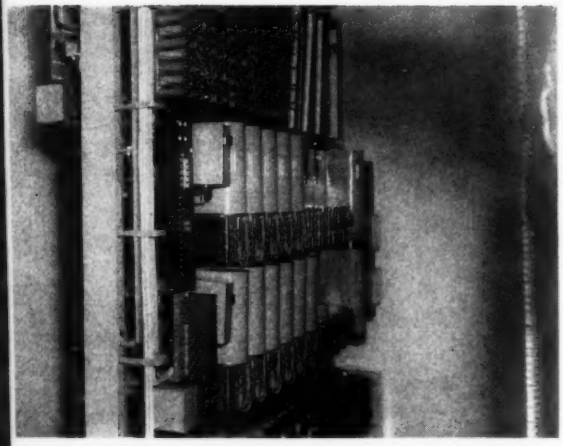
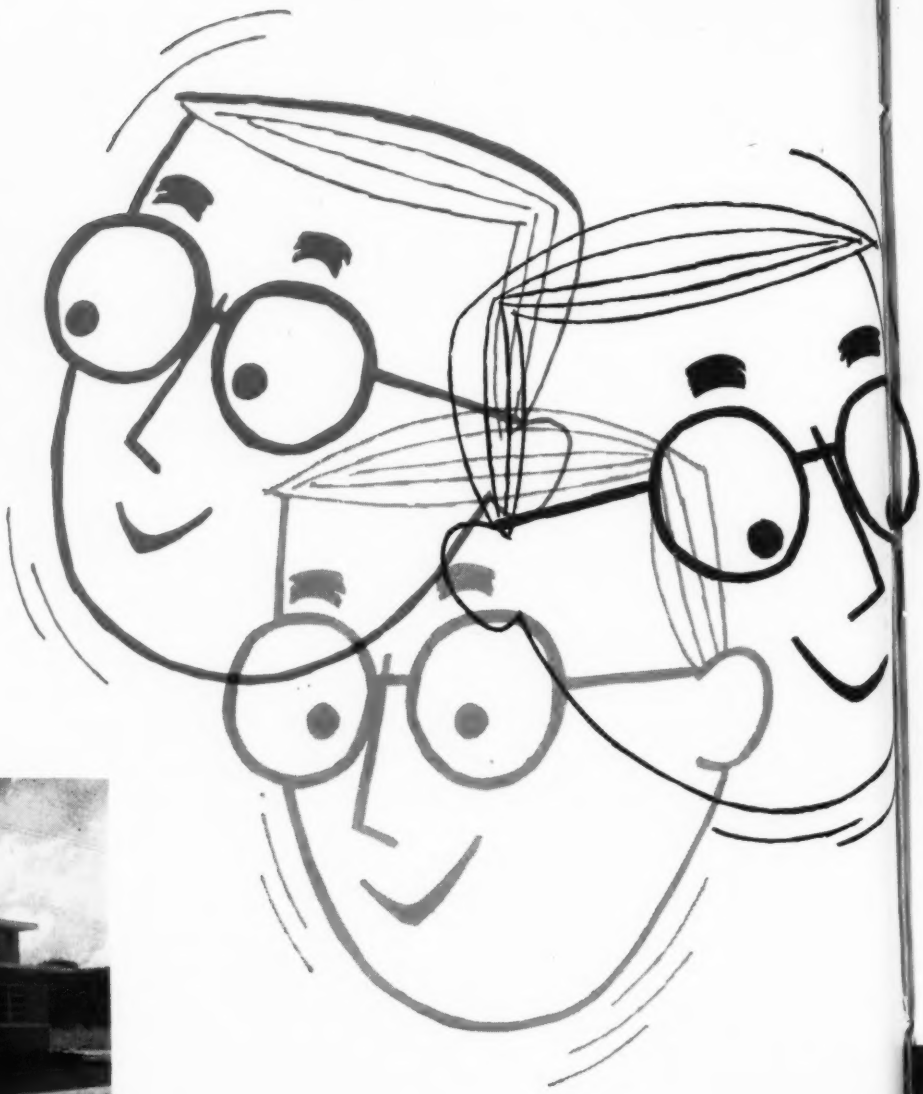


Altavista, Virginia
—800 lines



Dunbar, Nebraska—100 lines



Auburndale, Florida—1300 lines

Filer, Idaho
—320 lines

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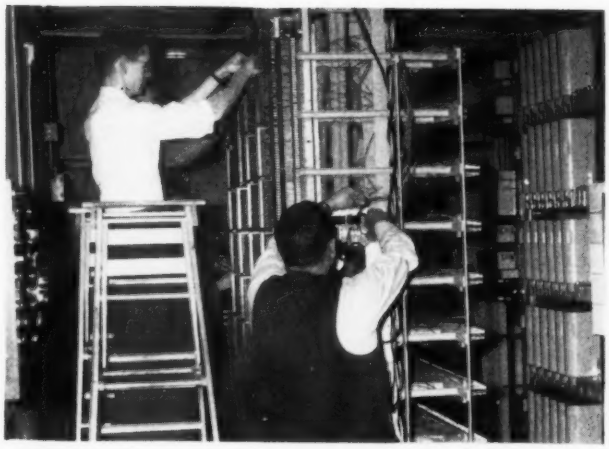
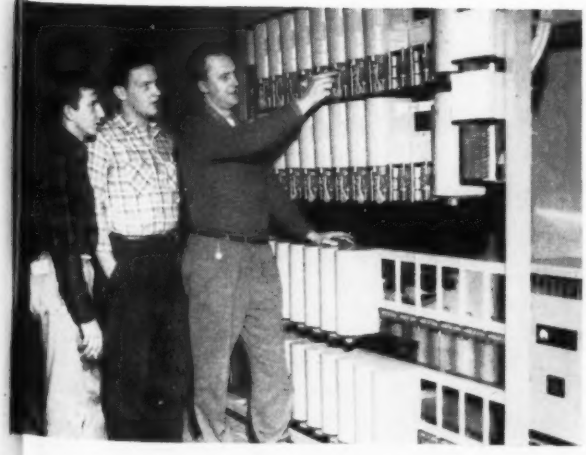


Hughesville, Pennsylvania—400 lines



Hollis, New Hampshire—160 lines

The number of Strowger Automatic exchanges is going up by leaps and bounds.

And there's a story back of this tremendous success.

Telephone men know that Strowger Automatic has always met every new need, every expansion requirement—and has done the job *economically*. They also know it insures minimum, low-cost maintenance, provides today's finest, most dependable service, and meets every foreseeable requirement—including Direct Distance Dialing.

In short, they know they can invest in it with *absolute confidence*.

So can you. Talk it over with a friendly Automatic Electric representative. He'll be happy to help you in every way possible. Address: *Automatic Electric Sales Corporation, Northlake, Ill. Or call FIllmore 5-7111.*

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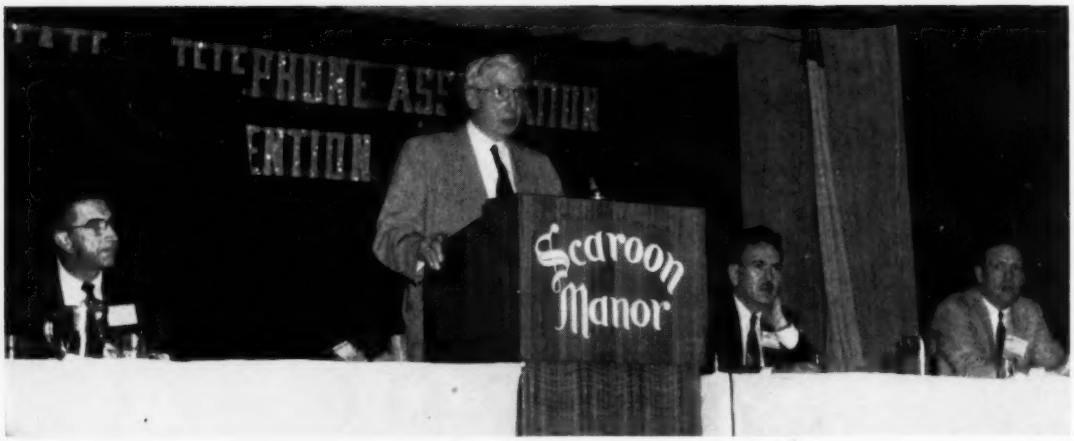
One of America's great communications systems

GENERAL TELEPHONE SYSTEM



John P. Boylan of Rochester, speaks on "Smoke Signals to Dial Days." Past President Don W. Walker (left) was presiding officer. Francis X. Welch, editor of *Public Utilities Fortnightly* and Washington editor of TELEPHONY, and Joseph R. Shaw of Albany completed the program.

increasing expenses may lead to higher earnings, provided the increases are based on plans that are themselves the product of a knowledge of market and profit potentials. . . .

"Merchandising means abandoning the idea that we hold a tight monopoly on the provision of an essential service. Admittedly, we have an exclusive operating franchise; nevertheless, there are vulnerable edges that can be nibbled away as evidenced by the number of private PABX's that are sold outright to our subscribers.

"It seems to me the recent "Hush-a-Phone" decision will very likely pave the way for further direct sales competition in the future. More important, however, we are in a tight competitive position with respect to all consumer spending."

Finally, he said, full acceptance of the concept means that we must be willing to accept certain risks that we have not heretofore been willing to do. It must be done as a calculated risk based on careful—but bold and imaginative—planning for profits.

He remarked, "Offhand, I can't think of any other business that has the magnificent market opportunities that are available to the telephone industry today. In the very nature of our daily operations, we acquire naturally what other businesses plan and scheme and spend large sums to acquire artificially; that is, contact—by telephone and face-to-face with present and potential customers. We have more market opportunities and more people in a position to contribute to merchandising efforts than any other business that I know. The challenge to us is to discover how to secure this rich potential."

In conclusion, Mr. Power stated:

"(This) is a philosophy that stakes a large stack of blue chips on the future of America, which is always a good bet. It is based on the belief that this country is now entering a period of explosive growth that will make our previous gains seem insignificant by comparison.

"It is an optomistic philosophy that believes this growth offers tremendous profit possibilities for any company with a management possessing the acumen to recognize its magnitude and velocity—the imagination to visualize its social and economic consequences—and the creative marketing ability to capitalize on the potentials inherent in this situation."

In developing his topic, "The Price —and the Market," O. Townsend MacMillan, vice president, upstate, New York Telephone Co., outlined the findings of a rural service committee of five Bell System operating company vice presidents. The committee's purpose was:

(1) To investigate the market for service outside base rate areas.

(2) To undertake to reach a judgment as to whether people were satisfied with the kind of service they were getting, or, if not, what they would like instead.

(3) To undertake to find measures of what it would cost and what it would be necessary to do to provide the service desired.

Mr. MacMillan reported that the following facts stood out from the mass of data obtained by the committee:

"The customers in our rural areas are pretty well bunched close in toward the base rate area boundary. By and large, they don't live too far out in the country.

"A good proportion of them represent substantial people—people who have the money and are willing to spend it for convenient living, as evidenced by the high percentages of household conveniences found.

"They think well of the telephone company; think it is doing a good job but they would like a higher grade of service—a service that is more convenient to use and one which fills their needs more completely.

"They're willing to pay a reasonable price for that better grade of service and when they talk about a reasonable price for it, it seems pretty clear that they're thinking in terms of dollars per month and not pennies per month of additional cost."

Mr. MacMillan stated that no final conclusions have been reached and that certain other factors have to be considered, such as (1) the feeling that if any rural service program is undertaken, the company cannot afford to offer an optional multi-party service; (2) the fact that the magnitude of the present capital expansion may have a bearing on the speed with which any program the company decides on can be carried out; (3) the lack, in recent years, of a reasonable assurance of opportunity to earn at a liberal rather than a bare-bones rate, and (4) certain problems of rate structure.

Aaron L. Jacoby, commissioner, New York Public Service Commission spoke on the subject, "People Will Talk." As partial proof of man's loquacity, he cited the 94 New York Independent companies' 518,500 stations, as of 1956.

He said a cross-section survey undertaken by the commission in May of this year, disclosed that of the various Independents studied, one reported 94 per cent of all families residing in its territory are telephone subscribers. Others reported percentages varying from a low of 75 per cent upwards to more than 88 per cent, with an average figure of 82.4 per cent.

Mr. Jacoby suggested that a good market for new business might be the furnishing of adequate service to volunteer fire departments. Mr. Jacoby also noted:

"Whereas very little dial conversion had been completed by Independent telephone companies prior to World War II, 39 companies, operating 98 exchanges, had completed their dial conversion programs by the end of 1956 and 51 more were providing dial service through 121 other exchanges, leaving only 91 manual exchanges still in service at the year's end.

"In other words, you are two-thirds of the way home toward your goal of total dial operation."

An inspirational talk, "America—At Random," was presented by John E. Holt-Harris Jr., of Albany, judge in

(Please turn to page 50)

NEW, SHORT *Koiled Kords**

CUT HANDSET LOSSES . . . on Coin Collector Telephones

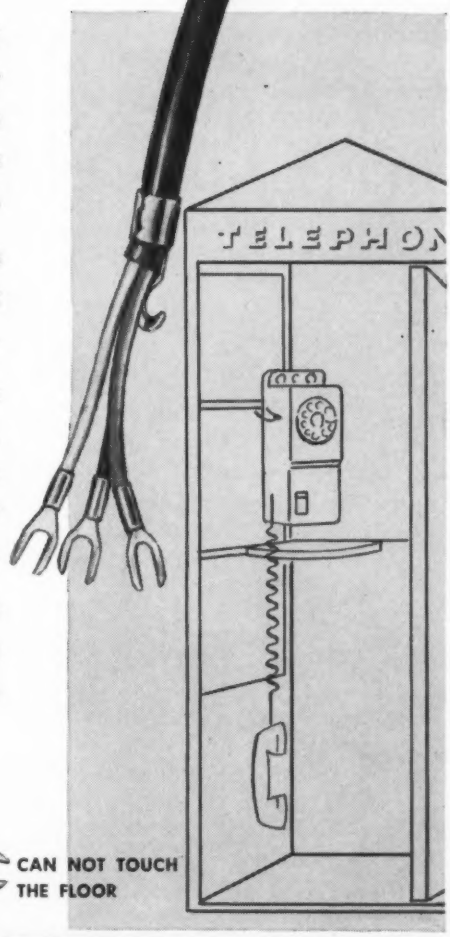
KOILED KORD ILLUSTRATED IS ACTUAL SIZE

These new short KOILED KORDS retractile cords allow sufficient length for use in telephone booths but are short enough to prevent the handset from hitting the floor if dropped.

Figure your past losses from broken handsets and you'll see how much these new short KOILED KORDS can save you.

These new short KOILED KORDS are available for Automatic Electric, Stromberg-Carlson and Western Electric handsets. Order direct from your telephone supply distributor.

KOILED KORDS, the original retractile cords, are the result of 17 years of research, development and use.



CAN NOT TOUCH THE FLOOR

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Koiled Kords INCORPORATED, BOX K, NEW HAVEN 14, CONN.

Courts and Commissions

New Jersey Independent Asks Increases in Rates

The West Jersey Telephone Co. recently applied to the New Jersey Department of Public Utilities for rate increases ranging up to 100 per cent. The last increase was obtained in 1951.

Rate raises are requested for multi-party business service as follows:

Belvidere, from $4.30 to $6.50; Blairstown, $3.80 to $6.25; Columbia, $3.80 to $6.50; Great Meadows, $4.30 to $6.75; Hope, $3.30 to $6.25, and Oxford, $4.30 to $7.00.

The application seeks an increase in the rates for one-party residence service, as follows:

Belvidere, $4.75 to $9.00; Blairstown, $4.50 to $8.75; Columbia, $4.50 to $9.00; Great Meadows, $4.75 to $9.25; Hope, $4.00 to $8.75, and Oxford, $4.75 to $9.50.

The cost for multi-party residence service would be raised as follows:

Belvidere, $3.25 to $6.00; Blairstown, $3.00 to $5.75; Columbia, $3.00 to $6.00; Great Meadows, $3.25 to $6.25; Hope, $3.00 to $5.75, and Oxford, $3.25 to $6.50.

Authorize Georgia Company's Bond Sale

The Georgia Public Service Commission on July 10 authorized the Western Carolina Telephone Co., Inc., to sell $600,000 of 5 per cent first mortgage bonds due 1982.

The commission order noted that the company has deemed it desirable to convert its outstanding short-term indebtedness to the Chase-Manhattan Bank into long-term obligations. The new first mortgage bonds are to be bought by Berksire Life Insurance Co., Pittsfield, Mass and Connecticut General Life Insurance Co., Hartford, Conn.

Seek OK of EAS in S. C.

The South Carolina Public Service Commission on July 18 was to have heard a joint request to establish extended area service (EAS) between the Fairfax exchange of the Southeastern Carolina Telephone Co. and the Allendale exchange of Southern Bell Telephone & Telegraph Co.

Two Neb. Companies Secure Increase to Cover Wages

The Nebraska Railway Commission on July 2 denied a general rate increase to the Northeastern Telephone Co., Elgin (TELEPHONY, July 20, p. 41), in a rehearing of a former denial of Jan. 30. The commission stated that the applicant had offered no further evidence in the matter.

However, the commission did approve an increase in rates and charges to produce additional gross revenue of $6,510.94 with which the company will increase employes' wages. The company was asked to file a revised schedule of rates for the commission's approval.

In a rehearing of a denial of Feb. 6 for a general increase in rates, the commission denied an application of the Skeedee Independent Telephone Co., St. Edward, for authority to increase rates and charges.

The commission found that the company had offered no further evidence, however, the company was authorized to increase rates and charges to produce additional gross revenue of $2,539.02 with which to increase employes' wages. The company was ordered to submit for approval rate schedules which will produce this additional revenue.

Pa. Commission OKs Two Financing Plans

The Pennsylvania Public Utility Commission approved a 5-million-dollar issue of first mortgage bonds by the General Telephone Co. of Pennsylvania, Erie, it was reported on July 15.

The money will be used to pay for a construction program and to repay improvement loans.

The commission also approved plans of the Peoples Telephone Corp. of Butler to issue a 1-million-dollar promisory note covering an earlier loan and to help pay for plant additions.

Emergency Party Line Use Law Held Defective in R. I.

Rhode Island's new law aimed at party-line telephone hogs recently failed its first court test when the judge held it was worded to protect property but not persons. Sponsors of the measure said on July 8 they would seek corrective action when the State Legislature convenes in January.

A case against Mrs. Grace Ross of Usquepaugh was the first brought under the state's new law. She was charged with failing to yield a party line so that another subscriber could summon a doctor.

The case was dismissed by District Judge Walter R. Orme in South Kingstown. He held that the law, intentionally or otherwise, is limited to instances where the loss of a home is involved.

State Rep. Thomas W. Pearlman and Arthur R. Prevost, who sponsored the bill in the State Legislature, said they had intended that it cover doctors, ambulances and all other emergencies. They said they would seek new legislative action to correct the measure.

New York Independent Given Increase in Rates

The New York Public Service Commission has accepted a tariff amendment filed by Cassadaga Telephone Corp. designed to increase its rates by an estimated $3,886 annually, effective Aug. 1. The company provides service to about 700 stations.

Toll-free service is also provided to Jamestown Telephone Corp.'s Sinclair exchange which serves about 600 stations. It converted its operations to automatic last June 29.

In filing its new tariff, the company reported that its plant investment has increased from $59,100 at the beginning of 1955 to more than $201,000 at the present time as the result of automatic conversion, and said that additional revenues were needed to enable it to continue adequate service and to earn a fair return on its investment.

XUM

From anchor to pole top—Chance makes everything you need in guying materials and pole line hardware—available from your local supply house. The Chance line of telephone hardware and guying materials includes thousands of items that meet or exceed industry standards.

You *know* the quality of Chance Anchors. To get the same high quality in pole line hardware—and the same fast service—ask your local supplier for the full Chance line for all your line construction needs.

A • B • CHANCE CO • CENTRALIA, MISSOURI

Kansas Companies Request Rate Increases, Sale

The Kansas Corporation Commission recently approved a $75.50 rate increase for Gorham Telephone Co.'s 71 customers at Olmitz. Sale of the Piedmont Telephone Co. by Leon D. Shepard to Robert D. Wells also has been approved by the commission.

On July 9 the commission was to hear application from the Atchison County Mutual Telephone Co. of Muscotah to raise its rates $2,800 (TELEPHONY, May 25, p. 44).

The commission on July 17 authorized the United Telephone Association, Inc., Dodge City, to increase its rates for six southwestern Kansas exchanges by $16,227. The company had requested an increase of $25,000.

The increase will affect telephone customers at Cimarron, Ashland, Inglewood, Hanston, Spearville and Kingsdown.

The commission on Sept. 16 will hear the application of Cassaday Mutual Telephone Co. to raise rates $1,248 to its 104 subscribers.

Delaware Company's Rates Increased Under Bond

The Diamond State Telephone Co. announced on July 12 it would increase its intrastate Delaware rates, effective July 21, under bond (TELEPHONY, July 6, p. 36).

The move followed an earlier order by the Delaware Public Service Commission which postponed and suspended the effective date of any proposed increases in telephone rates throughout the state until Oct. 17.

Since the commission reached no final decision on the proposed increases, the company was legally entitled to raise its rates automatically under bond, but the higher rates are subject to possible subsequent reversal by the commission following hearings and investigation.

In order for the company to put its proposed rates increase into temporary effect, Delaware law requires that it must provide to make refunds to its customers to the extent that the commission may require. The amount of the bond for this purpose was estimated at $1,880,000, the anticipated annual revenue increase under the proposed new rates.

Ill. Company Asks to Sell

The Illinois Commerce Commission on July 26 was to hear the application of the Farmers' Mutual Telephone Co., Geff, to sell to the Wabash Telephone Co-Operative, Inc.

A 23-year-old operator with Lincoln Telephone & Telegraph Co. in York, Neb., has found that thrift really "pays off." When the First National Bank of her home town recently offered on "Dollar Day" to credit $1.00 for every 90 cents deposited in a savings account, Adeline Sachschewsky gathered up her savings and drove to the bank with nearly one ton of pennies in cloth bags which bulged from back seat, front seat and car trunk. The teller had to get a small hand truck to carry the copper cargo of 300,000 pennies into the bank. This thrifty operator says she began saving as a child. She had started to leave a local store without the one penny in change from her dollar purchase, when the merchant called her back, saying "If you save your pennies, some day you'll have dollars." Adeline took the advice seriously, and now figures that with the $300 bonus and the normal interest rate, she should realize around 12 per cent on her $3,000 deposit.

Two New York Companies Ask OK on Financing

The New York Public Service Commission on July 23 was to hear the petition of the Highland Telephone Co. for authority to issue (a) $700,000 of 5⅜ per cent 25-year first mortgage bonds; (b) $200,000 of 4 per cent 15-year convertible debentures, and (c) 6,795 shares of no par common stock.

The commission on July 25 was to hear the petition of Trumansburg Home Telephone Co. for approval of amendment of its certificate of incorporation and for permission to issue $375,000 principal amount of indebtedness.

C&P Seeks $6,527,000 Rate Raises in Virginia

The Chesapeake & Potomac Telephone Co. of Virginia is seeking rate increase of $6,527,000 in gross revenue, it was reported on July 19.

The additional gross revenue would give the company an additional net of $2,979,000, it was estimated in the rate application. This would be an increase of 14.6 per cent in current net earnings, according to the company's estimate of $10,204,000 net earnings for the six months ending Sept. 30.

The present level of net earnings is 5.08 per cent of the company's net original cost investment of $201,033,000, according to the application.

The 5.08 per cent is inadequate to attract new capital, the company stated. It said the rate increases, if allowed, would increase this rate of earning to 6.56 per cent.

Cuban Telephone Completes $10,216,500 Stock Sale

The largest sale to the Cuban public of equity securities of a company operating in Cuba has been completed by the Cuban Telephone Co., a subsidiary of International Telephone & Tele-

K. MILLER

SLITTER and STRIPPER

for RURAL "C" LINE WIRE

. . . is the tool that does the job

price $10.00

F.O.B. SPRINGFIELD, MASS.

MODEL #205

For making longitudinal cuts in the insulation of parallel types of wire, and for removing insulation from the wire ends after a longitudinal cut is made. Heretofore, preparing the ends of C Rural Wire for terminating, or splitting the wire for bridging, presented serious problems when only usual tools were used: the K. Miller, Model #205 slitter and stripper is your logical answer.

It is self closing for safety. Heads are made for 12 and 14 gage wire (specify wire gage size when ordering). Slitting and Stripping Knives are replaceable. Black finish—Plastic handles.

USED BY MAJOR TELEPHONE INSTALLERS —
A vitally necessary tool for Rural "C" Line Wire Installations.

K. MILLER TOOL and MFG. CO.

SPRINGFIELD 4, MASSACHUSETTS

graph, it was announced on July 18 by IT&T President Edmond H. Leavey. A total of 102,165 shares, par value each $100, were sold exclusively in Cuba for an aggregate amount of $10,216,500, which will be used to expand the company's services.

The new financing was made possible by an agreement signed with the Cuban Government on March 14, amending the company's franchise and authorizing telephone rates producing a net return of not less than 7 per cent on total capital invested in the company. The program of expansion now being undertaken in consequence aims at installing 61,000 new telephones by the end of 1960, at a total expenditure of more than 60 million dollars. This will represent an increase of approximately 42 per cent over the telephones now in service.

Whiting of Meadville, Pa. Company, Retires

Louis E. Whiting, vice president and treasurer of Meadville (Pa.) Telephone Co., retired on June 28 after 34 years of service to the company, and more than 46 years in the telephone field.

Mr. Whiting became manager of the Meadville company in 1923, going there from Jamestown, N. Y., where, for the previous eight years he had been associated with the old Home Telephone Co. (later the Jamestown Telephone Co.)

Mr. Whiting gave up teaching school in West Virginia in 1911 to go to work for the Commercial Union (later the Ridgway Telephone Co.) in Ridgway, Pa., his first telephone position.

He will be succeeded by George P. Evert as vice president and treasurer of the Meadville company.

Okla. Governor Proclaims Independent Telephone Week

The Oklahoma Telephone Association has announced that on July 10 Governor Raymond Gary proclaimed the week of Sept. 8-14, 1957, as Independent Telephone Week in Oklahoma.

The governors of four other states—Maryland, Missouri, Tennessee and Indiana—have also issued proclamations regarding similar observance of the week in their respective states.

Ill. Company Granted Raise

A rate increase of $10,098 was granted recently to the Milledgeville Mutual Telephone Co. by the Illinois Commerce Commission. The raise was designed to produce a 5 per cent return on the company's plant fair value of $248,000.

Walter J. Barrett of New Jersey Bell Telephone Co., was recently elected president of the American Institute of Electrical Engineers, the world's largest engineering society. Mr. Barrett (right) was presented with the president's pin by M. S. Coover, current president, at the annual summer general meeting in Montreal. The AIEE has over 50,000 members, not including students.

Use Hair Dryers to Restore Flood-Damaged Equipment

In a supreme effort to restore service and save expensive central office equipment, Illinois Bell Telephone Co. resorted to both ladies' hair dryers and big heater-blowers (used by air lines to warm up plane engines in cold weather), to dry out equipment damaged by the recent Chicago record flood caused by a 6.24-inch rainfall.

Illinois Bell based its hopes for getting Midway Airport back into normal telephone operation on an ingenious "wash-day" for the 450-line, $100,000, step-by-step automatic PBX. The process started the night of the rain (July 12) when Chicago Fire Department and company pumps started to empty the equipment room of its load of water. During the height of the storm, progress was slow, but next day the room was emptied and the equipment was hosed down to rid it of mire and oily sludge which had soaked in from a nearby boiler room.

Drying was the next step, and was accomplished by some of the most novel telephone maintenance equipment ever assembled—a collection of hair dryers quickly acquired from a large appliance outlet, and the airplane heater-blowers.

During the restoration, Illinois Bell ordered six mobile units, the emergency telephone trailer and the public telephone trailer to the airport.

The day after the long night of rain, company engineers and plant men provided temporary service to air lines and other airport customers by installation of 10 positions of manual switchboard. Most of the other equipment was working by that evening. Operators for the manual boards were quickly recruited by the company PBX division of Chicago traffic. At the same time other forces were also working around the clock to restore teletypewriter service.

Over-all, Illinois Bell accomplished one of the biggest and fastest restoration jobs in its history—because thousands of its people had worked round-the-clock during the weekend.

The 6.24-inch record rain had silenced 44,000 Chicago telephones. In the company's state area, the deluge and additional rain troubles in storm-plagued Springfield the next day, caused 29,000 telephones to go out of service for a company total of 73,000.

By the morning of July 15, only about 8,000 of Chicago's 1.8 million telephones remained out of service. In the state area, plant people were rapidly cleaning up the 2,500 cases of trouble remaining on July 14.

Western Electronic Show To Be Held Aug. 20-23

The visitors services committee for the Western Electronic Show & Convention is planning special conveniences for the main floor exhibition areas of the Cow Palace during the show dates Aug. 20-23 in San Francisco.

Charles N. Meyer, of Meyer and Ross, chairman, and Victor N. Zachariah of Zack Radio, alternate chairman—both of San Francisco, have reported their committee plans to Norman H. Moore, show vice-chairman for WESCON-1957.

According to Mr. Meyer, "Our function is to make sure that any and all information relating to the comfort and pleasure of the visitors will be intelligently dispensed."

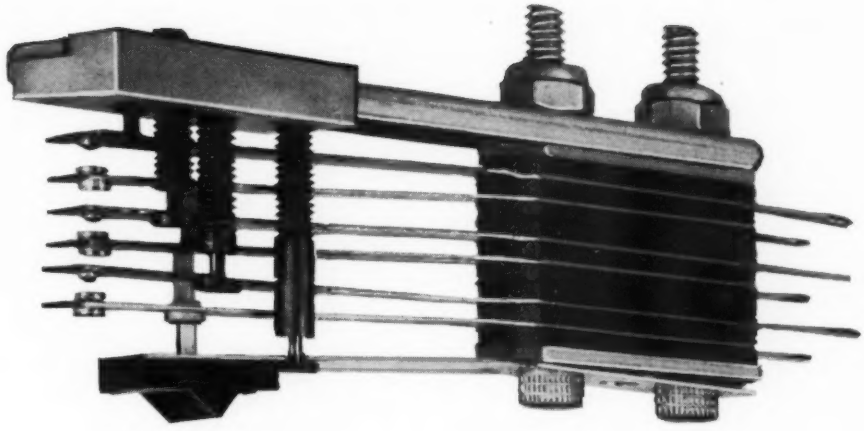
This will be done mainly through a booth located in the center aisle at the main entrance to the Cow Palace arena. The "Message and Information Corral," as it is to be known, will be manned by young women from the San Francisco Convention & Visitors Bureau. They will be in western garb in keeping with the theme and the main purpose for which the Cow Palace was orginally built—to house annual livestock expositions.

Also on hand throughout all open hours of the show will be two factory representatives from the California Chapter of the Representatives, a northern California organization.

OKs Paystation Rate in Neb.

The General Telephone Co. of Nebraska, Columbus, was authorized by the Nebraska Railway Commission on July

ESCO RINGING EQUIPMENT



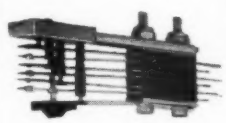
MEMBER

. . . a new twist in interrupter design assures simple, permanent pile-up adjustment

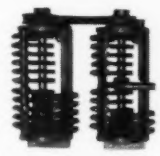
Just a simple twist of the set screws in ESCO Interrupter Pile-Ups, and you get accurate spring adjustments that stay put. You never need to use old-fashioned spring bending methods. Springs and contacts last longer because springs retain their original shape and tension, and contacts stay in alignment. This new design, too, allows up to six adjustable springs on the same pile up and that means better timing with fewer cams.

But this exclusive adjustment feature is just one of many reasons why operators and engineers who design and install equipment insist on ESCO. Compact vertical-mounting, factory pre-wiring, and permanently aligned drives on Esco Ringing Assemblies are other clinching reasons.

Why not find out for yourself why only ESCO Ringing Equipment can give the kind of service that satisfies operators and their subscribers alike. ***Write today for full information.***



Screw adjusted pile-ups



Compact, accessible interrupters

Combination alternators

Lifetime drive motors

"Ready-to-go" pre-wiring

Permanently aligned drives

ADDITIONAL ESCO FEATURES (details in future ads in this series) explain why ESCO components are included in the installations of prominent suppliers like Automatic Electric Co., Federal Telephone and Radio Corp., Kellogg Switchboard Supply Co., Leich Sales Corp., Stromberg-Carlson Co.

ELECTRIC SPECIALTY CO.
176 South Street, Stamford, Connecticut

5 to increase its charges for local service from public and semi-public telephones from five cents to ten cents.

Mobile Telephones Aid Mine Rescue Operations

Five coal miners trapped more than 14 hours crawled 250 feet to freedom recently in Ohio. More than 300 people cheered each of the liberated miners as they appeared in the glare of powerful nightlights before the waiting crowd.

Two teams of state mine rescue workers were aided by newly developed portable mobile telephone sets provided by Ohio Bell Telephone Co.'s Steubenville office.

From 8 a.m. to midnight, telephone employes in Steubenville cooperated to help save the lives of the five trapped men as mining officials, rescue workers, relatives of the victims and over 50 reporters from newspapers and magazines used the new mobile telephone sets.

Installers set up the telephone sets and commercial service engineers placed all the calls.

The portable mobile sets, not yet scheduled for commercial distribution, were put in working condition for the emergency by central officemen. Without the on-the-scene assistance of mobile telephones, communications would have been almost impossible as the nearest telephone to the scene of the accident was over 3 miles away.

Nevada Independent Plans $3,000,000 Expansion

Provision of mobile telephone service is included in a construction and equipment expansion program to cost at least 3 million dollars within the next year by Southern Nevada Telephone Co., Las Vegas, Nev., according to H. G. O. Weiler, president.

Construction also includes a new three-story office building, a second-floor addition to the present central office building, and a new warehouse and repair shop, along with adequate storage yards for cable, poles and trucks.

IN THE NATION'S CAPITAL

Concluded from page 18

this grid. A decoding device would be attached to the subscriber's TV set to enable him to receive a toll program over one of the channels not used by a "free" station.

Every month the subscriber would get a punch card showing all the programs that month. To see a program, you would insert the card in the decoder. This would record on the card each program you saw, for billing purposes. This charge per program would be on top of the $3.00 monthly "subscription fee."

Fox said Skiatron had not decided on what prices it would charge for baseball games, plays, and other entertainment. However, he said he and Dodger President Walter O'Malley had discussed a charge of 50 cents to $1.00 for a baseball game. He said the team would get one-third of the receipts from toll TV, and Skiatron the rest. Fox called it a "poor man's medium," designed for the man who cannot afford to pay high prices to see these attractions.

Out in Los Angeles the city council seemed to be having trouble making up its mind whether to allow Skiatron or a rival outfit—International Telemeter Corp., a subsidiary of Paramount Pictures—a franchise for subscription TV. The city stands to gain 2 per cent of annual gross revenues under Skiatron's bid.

British Telephone Increase

Over in Great Britain where the Post Office runs the telephone service, Postmaster General Marples has announced a combination mail, telephone, and cable rate increase of 117.6 million dollars (42 million pounds) effective Oct. 1. Just like that! No regulatory commission to talk back, or cut down an increase to a third or nothing, as happens to telephone companies in the United States. When the British Postmaster wants to raise the telephone rates, he does it.

Marples announced the increase along with an explanation of the reasons for it for the benefit of Labor members of Parliament. They have been arguing that the higher charges would be a major spur to inflation which the Conservative government is trying to fight.

But Marples pointed out that eleven-twelfths of the additional sum is needed to meet wage increases to postal and telephone employes. These increases have been granted by an industrial disputes tribunal which has the final say over such matters in Great Britain.

A former Postmaster General, Ness Edwards, who held the job when the Labor government had control, said he thought it would be a bad example to charge off all the wage increases against the telephone subscribers and users of the mail in the form of increased rates. He said he believed the government ought to absorb some of them. Edwards thought it would probably look a little better politically if the British citizen paid a little more taxes and a little less on his telephone bill or for his mail service.

British telephone rates are already fairly well subsidized by a bookkeeping method which passes a portion of depreciation and other operating expenses on to the taxpayers. As a result, telephone rental charges are quite modest by American standards.

The business rental charge, even under the increased rates, will be $39.20 (14 pounds) a year and residence subscribers will be charged $33.60 (12 pounds) a year. But British rates are not comparable to American telephone rates because the British rate is only a rental charge.

There is also a charge per call, which varies from slightly less than 3 cents to 3½ cents on local calls. British telephone subscribers formerly had a "free minimum" of 100 calls (per year, that is) before being assessed on a per-call basis. But the 100-free-call minimum will be abolished under the new rates.

Bell Laboratories Develops Thermo-Compression Bonding

A significant break-through in the technique of attaching leads to semiconductor devices has been achieved at Bell Telephone Laboratories, it was reported on July 16.

Research by O. L. Anderson, H. Christensen and P. Andreatch (at Bell Laboratories) has shown that a combination of heat and pressure can be employed to provide a firm bond between various soft metals and clean, single crystal semiconductor surfaces.

Called thermo-compression bonding, this new technique provides a bond that is stronger than the lead itself. Temperatures and pressures required are not high enough to affect the electrical properties of the semiconductor material.

One method of forming a suitable bond is to employ a heated element such as a wedge, a flat or a point, to press the metal against the heated semiconductor with a pressure sufficient to cause a slight deformation of the lead. Adhesion occurs within a matter of seconds.

Another useful connection may be made by butting the balled (or headed) end of a wire against the heated semiconductor by means of a capillary tube.

Thermo-compression bonding has a number of advantages over other meth-

(Please turn to page 50)

HYCON-PAGE* announces Staff Openings for Senior Instructors

in

INSIDE PLANT and OUTSIDE PLANT

Installation • Operation • Maintenance

Business and Accounting Methods

Hycon-Page is designing and engineering commercial and military communications systems for areas of the free world where such facilities are now inadequate or non-existent. The systems will be administered by the governments of these areas, and operated and maintained by their citizens.

These citizens must be trained now, during the design and engineering phases of the projects, in the methods and techniques of installation, operation and maintenance of modern telephone equipment, and in the administrative and accounting procedures necessary to the successful operation of a modern telephone business.

Staff positions are now open on the Hycon-Page systems engineering team for men experienced in organizing courses and instructing in all phases of inside and outside plant equipment installation, operation and maintenance, and in telephone business and accounting methods. These positions offer rewards in terms of both salary and professional status. The work will be in overseas areas for periods of 18 to 24 months, and compensation includes a 25 per cent overseas salary differential plus cost-of-living allowance. A knowledge of French is desirable, though not required.

We invite inquiries from highly qualified men whose telephone background gives them an awareness of the problems to be dealt with. We want men whose ability will reflect credit upon American know-how, and whose integrity will help strengthen the ties between the United States and its friends of the free world.

Please send inquiries, including résumé to:

G. B. Harris

H Y C O N - P A G E

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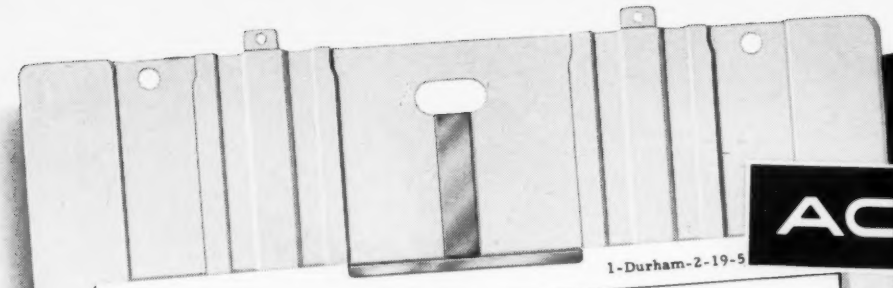
*Hycon-Page Communications Engineers is a Joint Venture of Hycon Eastern, Inc., Cambridge, Mass., and Page Communications Engineers, Washington, D. C.



1-Durham-2-19-5

RATES Day S-S	RATES Day P-P	RATES N and S S-S	RATES N and S P-P	Point		T.C. Code	Route
60	100	50	90	Aberdeen	✓9	01+	Tc Southern Pines Rlgh 052 (S Pn)
70	115	60	105	Ahoskie	rd		R Mt 01+
65	105	55	95	Albemarle	rd		Tc Chlot 572
105	165	90	150	Andrews			Tc Murphy Chlot 164+07 (Murphy)
					rd		
45	75	40	70	Angier	✓9vnm		Tc Rlgh 121 (Rlgh)
35	60	35	60	Apex	✓9vn	164+	Tc Rlgh 16+
95	155	80	140	Arden	rd		Tc Asvl Chlot 684+
55	90	50	85	Asheboro			Tc Gnbo 141
					✓9	164+	Chlot 164+
95	155	80	140	Asheville	✓vnm	045+	Tc Morehead City Rlgh 045+0+
85	140	70	125	Atlantic	✓9	045+	Tc Morehead City Rlgh 045+
85	140	70	125	Atlantic Beach	✓9vnm	01+	Tc Ahoskie R Mt 01+5+
70	115	60	105	Aulander			Tc Washington Rlgh 059 (Washington)
75	125	65	115	Aurora		98+	Tc Gnvl R Mt 98+141+
					✓9vnm		Tc Chlot 572 (Thru Albemarle)
65	105	55	95	Ayden	rd		
60	100	50	90	Badin			
					✓9vnm	4+	Tc Wan R Mt 4+166+
50	85	45	80	Bailey	✓9		Tc R Mt +
60	100	50	90	Battleboro	✓9vnm	133+	Tc New Bern Chlot 745+
80	130	70	120	Bayboro	✓9	045+	Tc Morehead City Rlgh 045+
85	140	70	125	Beaufort			Tc Washington Rlgh 059 (Washington)
80	130	70	120	Belhaven			Tc Chlot 2
					✓9		
80	130	70	120	Belmont (Gaston Co)	✓9vnm	022+	Tc Dunn R
50	85	45	80	Benson	✓9	148+	Tc Gaston
80	130	70	120	Bessemer City	✓9vnm	034+	Tc Tarbo
65	105	55	95	Bethel			Tc Chlot
60	100	50	90	Biscoe	✓9vn	164+	Tc Asvl C
90	150	75	135	Black Mountain	✓9vnm	047+	Tc Lumberton Rlgh 04
70	115	60	105	Bladenboro			

RATES Day S-S	RATES Day P-P	RATES N and S S-S	RATES N and S P-P	Point		T.C. Code	Route
85	140	70	125	Blowing Rock	✓vn	209+	Tc Lenoir Chlot 295+
45	75	40	70	Bonlee	rd		Tc Gnbo 146 (thru Siler City)
85	140	70	125	Boone	✓9	209+	Tc Lenoir Chlot 2L+
70	115	60	105	Boonville	rd		Tc W Sal 02 (Thru Elkin)
95	155	80	140	Brevard	✓8,9	155+	Tc Hendersonville Chlot 2L+
					✓9vn	031+	Tc Sanf Rlgh 031+2L+
45	75	40	70	Broadway	rd		Tc Sylva Chlot 164+05 (Sylva)
105	165	90	150	Bryson City	✓9vnm	022+	Tc Dunn Rlgh 022+8+
45	75	40	70	Buies Creek	✓9vnm		Tc Hson 16+
45	75	40	70	Bunn			Tc Wilm 020
					rd		Tc Gnbo 146 (Thru Siler City)
70	115	60	105	Burgaw	rd		Tc Jacksonville Rlgh 025+
40	65	40	65	Bynum	✓4,9	025+	Tc Elizabeth City Rlgh 015+
70	115	60	105	Camp LeJeune	✓9	015+	
85	140	70	125	Camden			Tc Asvl Chlot 648+
					✓9vn	164+	
95	155	80	140	Canton	ts		Tc Rlgh +
40	65	40	65	Cape Fear Power Station	✓9vn		Tc Wilm 16+
80	130	70	125	Carolina Beach			
					✓9vn		Tc Rlgh 19+
30	50	30	50	Cary	✓9vnm		Tc R Mt 17+
50	85	45	80	Castalia			Tc Newton Chlot 320 (Newton)
75	125	65	115	Catawba			
					✓9vnm	012+	Tc Whiteville Wilm 012+8+
75	125	65	115	Chadbourn	✓9	133+	Tc Sylva Chlot 164+05 (Sylva)
100	160	85	145	Cherokee	✓9vn	128+	Tc New Bern Chlot 447+
80	130	70	120	Cherry Point	rd		Tc Lincolnton Chlot 435+
80	130	70	120	Cherryville			Tc Salis Gnbo 022 (Salis)
							Tc Newton Chlot 320 (Newton)
70	115	60	105	China Grove	✓9vnm	012+	Tc Whiteville Wilm 012+17+
80	130	70	120	Claremont	✓9vnm	032+	Tc Smfd Rlgh 032+6+
70	115	60	105	Clarkton			
45	75	40	70	Clayton			

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SAVE TIME AND MONEY

Master copy of rate and route materials used for multi-card bulletins may be quickly set up on Photo Panels.

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Each line of printing is typed on a Photo Panel card, proofread and easily inserted on the runway of the panel in the sequence in which it is to be printed.

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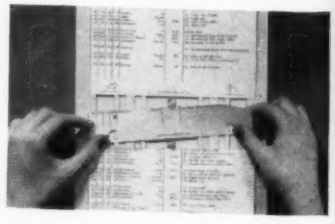
Each panel provides space to set up two pages (back and front) of a multi-card holder or one page of an under glass holder.

Acme Photo Panels also save time in preparing:

Status of Work Reports . . . Engineering and Installation Schedules . . . Dial Routing . . . Transmission Design Circuit Layouts . . . Schedules of Voice Frequency Repeater . . . Toll, Trunk and Recentering Cable Programs . . . Schedules of Carrier Projects . . . Schedules of Dial and C. O. Equipment Projects.

Your typewriter can be your typesetter! Any typewriter, preferably electric or Vari-Typer, with its interchangeable type, may be used.



After cards are typed and proofread they are easily and quickly mounted on Acme Photo Panels. The curved, die cut ears are tucked under the runways and nest together with only the typed visible margin exposed.

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All changes are made by replacing pages, thereby eliminating hand "write-ins." A new Photo Panel insert card is typed for each change and only the change is proofread. The reduction in time spent for proofreading and clerical time is considerable.

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Photo Panels, as all other Acme Visible Equipment, have been designed for telephone use by Acme Systems Engineers in close co-operation with practical, experienced, telephone experts. Tell us your requirements and receive our suggestions.

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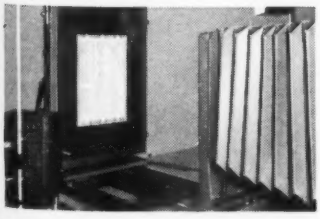

Photo Panels are reproduced by any of the numerous photo reproduction processes . . . offset, lithography, photo engraving, Xerography, photostat.

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ods of attaching leads to semiconductors. The bond is stronger; the technique is more readily adaptable to mass production; no chemical flux or other chemical contaminant is involved in the process; and leads may be attached to much smaller areas, an invaluable aid in fabricating high-frequency transistors.

Adhesion takes place in seconds with pressures of a few thousand pounds per square inch and temperatures well below the melting point of the alloy of the metal and semiconductor. A gold-germanium bond appears to be the easiest to make, but gold, silver, aluminum and a number of alloys can be readily bonded to either germanium or silicon.

Intensive investigations are underway to determine the mechanism of this bonding process, and to further study its practical applications. The technique is already being employed on a laboratory basis in the fabrication of transistors.

NEW YORK CONVENTION

Concluded from page 38

the city traffic court. The talk was built around three words—neglect, compromise and perspective.

He pointed out that the 16th Amendment, which gave Congress the power to tax personal income, passed virtually unnoticed; also, Great Britain lost this country mainly through neglect.

He reminded his listeners that in the Constitutional Convention of 1787, there was rancorous disagreement between men with widely varying views, yet agreement was finally reached through compromise.

And, he said, if you think we live in a time of tangled international relations, consider the period in which the Monroe Doctrine was proclaimed and the fact that there was very little United States might to back it up.

In summarizing, Judge Holt-Harris said:

"We have everything God can give us. Let's not lose it through neglect. Let's not get so pre-occupied with day-to-day occupations that we forget to exercise our fundamental rights as American citizens, including our right to freely discuss the issues of the day.

"Don't demean compromise. Every action Congress takes lies between the extremes of opinion. This is proper as long as the actions are tempered with justice and honor.

"Look at things in historical perspective. We'll come out pretty well as long as neglect doesn't get us, and as long as compromise is rightly used."

A fascinating history of communications was told by John P. Boylan, chairman of the board of Rochester (N. Y.) Telephone Corp., in his "Smoke Signals to Dial Days."

From the Greeks of 1260 B.C. who lighted bonfires on hills 50 miles apart to relay the story of the fall of Troy back to their capital, Mr. Boylan reviewed communications developments including:

The runner with the news of the Battle of Marathon in 490 B.C.

First carrier pigeon use—by the Sultan of Baghdad in 1174 A.D.

Tom-tom drums of savages.

Smoke signals of the North American Indians.

The Pony Express.

A system of semaphore signals during Napoleon's reign.

Cannon report relay—to tell of the Erie Canal opening in 1823.

The operation of the telegraph in 1844.

The laying of the Atlantic cable by Cyrus Field.

Several of the most important early events in the development of the telephone.

Francis X. Welch, editor of *Public Utilities Fortnightly* and Washington editor of TELEPHONY, painstakingly answered the question: "How Many Sides Has Regulation?" His talk appeared in full in the June 22 issue of this magazine.

Final speaker on this meaty program was Joseph R. Shaw, of Albany, president of Associated Industries of New York, Inc. His subject: "Unemployment Insurance—Your Stake In It."

Mr. Shaw listed what he thought were essential points for the laymen to know about unemployment insurance. He also showed how the federal government exerts purse-string control via the program. He urged lady listeners to take an interest in the matter, and cautioned all to learn the background on it so as to comment intelligently.

The following are the directors for the ensuing year:

George S. Beckwith of Keeseville; Sheldon A. Birdsall of Margaretville; F. Mark Clark of Rochester; Frank D. Fancher of Middletown; Fred S. Florance of Monroe; C. Ray Lloyd of Manlius; Robert Maytum of Fredonia; William A. Seely of Norwich; Albert N. Seward of Jamestown; R. Parker Sullivan of Johnstown, and Don W. Walker of Shortsville.

Directors re-elected the following officers: President, Mr. Lloyd; vice president, Mr. Seward; treasurer, W. M. Griswold; secretary-assistant treasurer, Mr. Beckwith, and executive secretary, Hamilton A. Cunningham.

Bert Wallace Retires From Kellogg After 43 Years

Bert Wallace, assistant director of engineering, Kellogg Switchboard & Supply Co., Chicago, a division of International Telephone & Telegraph Corp., will retire July 31 after 43½ years of continuous service with the company. More than 200 of his fellow employes honored him at a testimonial dinner on June 27 at the Clearing Industrial Club.

BERT WALLACE

Since joining Kellogg in 1914, Mr. Wallace has been actively engaged in all phases of engineering design and development of telephone switching equipment and apparatus. He was also project engineer on the original development of dial switching equipment. In addition, he has numerous inventions covered by United States patents assigned to the Kellogg company. Many of these patents have counterparts in foreign countries.

Mr. Wallace is a member of the Chicago chapter of the Armed Forces Communications & Electronics Association; consulting member, Communications Section, Association of American Railroads committee on inside plant equipment; and member of IT&T Technical committee #7, industrial apparatus.

Early in August, Mr. and Mrs. Wallace will leave Chicago for New Port Richey, Fla., where they have purchased a new home.

Baessler Named to CF&I Post

Karl H. Baessler has been appointed director of wire product development for the Colorado, Wickwire Spencer, and Pacific Coast divisions of The Colorado Fuel & Iron Corp., it was announced on July 11 by A. F. Franz, CF&I president.

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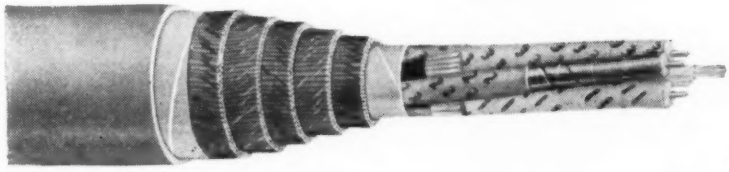
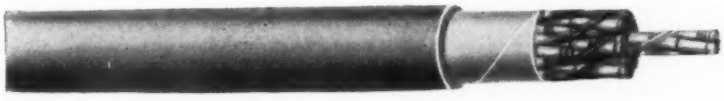
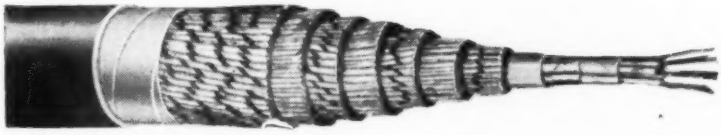


Composite Co-axial and Audio Long Distance Telephone Cable



60 Channel 14 Pair Carrier Telephone Cable



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- **Profitable noise**
- **No more messenger**
- **Perfect protection**
- **Ready to wire in**

Published regularly to help you get the most out of your materials and supplies dollar

by Earl A. Roesch, Office Mgr. and Inside Sales—Rochester

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Reserve lead keeps battery young

Inside the unique lead buttons in an Exide-Manchex positive plate there's a coil of reserve lead designed to prolong battery life. Over the years, as this lead is needed, it goes into action, instantly and automatically.

The unique thing about Exide-Manchex construction is that the reserve lead does not have to support the plate. The spiral lead buttons are tightly locked into a cast lead-antimony alloy grid several times more rigid than pure lead. Hence the reserve lead can be completely consumed while the plate retains its strength.

Only Exide-Manchex Batteries have this construction. In addition, they feature a plastic jar that saves weight and space, high level electrolyte for less frequent filling, and huge bottom reservoir that virtually insures against sediment shorts.

Noise can be money!

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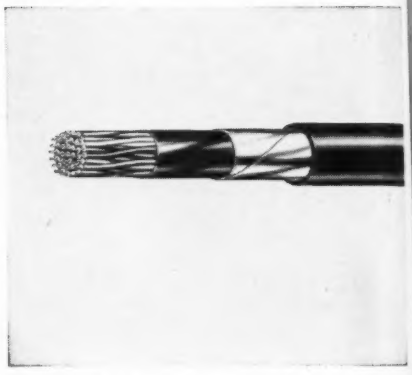
Economical 775-P-SS Self-Supporting Telephone Cable

Low Cost SS Cable With Dependable, Long Life



Available in 6, 11, 16 and 26 pair

This Ansonia Wire & Cable Company product offers finer electrical characteristics than any other comparable cable.

In outside plant construction you can eliminate messenger and associated hardware by using light, flexible Ankoseal Type 775-P Self-Supporting Cable.

Its 19 gauge medium-hard copper conductors are individually insulated and paired with systematically varying lays to eliminate crosstalk. Aluminum tape sheathing and plasticized jacket provide excellent protection against weather.

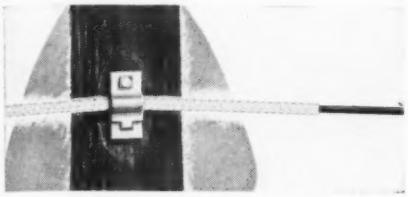
Protects plastic cable from pressures, abrasion

Ties, clamps, trees and other objects are rough on plastic-covered self-supporting cable.

The perfect protection is a Preformed Line Guard—available in metal or plastic.

Metal line guards are specially useful for supporting cable at poles. They are a must for tangent supports. They spread the pressure

around — preventing slippage and preventing damage to the plastic covering.

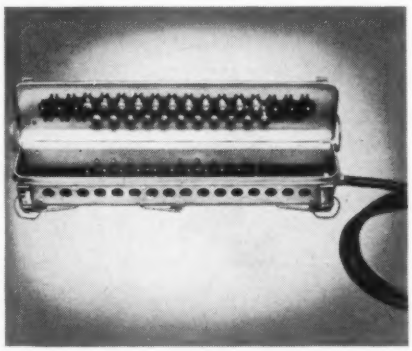


Available in standard 6-ft. lengths. Other lengths on request.

Plastic line guards are ideal for protecting and insulating conductors that pass through trees, close to buildings, or over other lines.

Compact—convenient—weatherproof

You'll find the Cook "Stranterm" strand-mounted cable terminal compact, light in weight, easy to install



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and extremely convenient for connecting or changing drops. It's furnished ready to wire in, complete with drawn box and cover of anodized aluminum alloy.

Cook Electric Company's "Stranterm" is the only strand-mounted terminal which can be installed unprotected and later be protected optionally by the insertion of Cook Minigap or Mytigap arresters.

The housing of this terminal is weatherproof. Wide-arc hinges and automatic cover stop make the interior more accessible for servicing.

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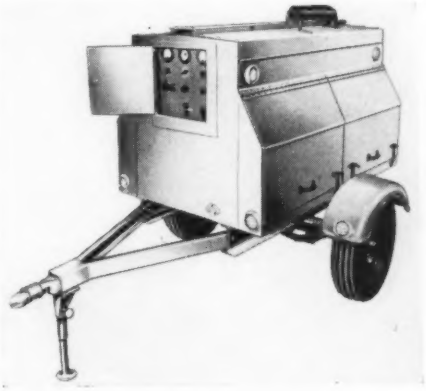
A DIVISION OF GENERAL DYNAMICS CORPORATION

Sales Offices: Atlanta 6, Chicago 6, Kansas City 8, Rochester 3, San Francisco

News on New Products

HEAVY DUTY PORTABLE POWER PLANTS—A new heavy duty portable power plant, designed especially to meet emergency power needs of telephone and other companies for emergency power and floodlight needs, is announced by Graybar Electric Co.

This portable power plant is mounted on two or four-wheel high-speed trailers, in capacities ranging from 10 KW to 100 KW, 110 or 220-volt single or three-phase current.



The revolving-field separately-excited .8 P.F. generators are designed to supply full rated capacity, powered by liquid-cooled gasoline or diesel engines for continuous service with sensitive governor regulations for maintaining generator frequency variations of less than three cycles.

The control panel is equipped with voltmeter, selector switch, ammeter with current transformers and selector switch, frequency meter, manually operated excitor field rheostat, automatic voltage regulator and is arranged with identified receptacles and terminal posts for ease of connecting loads.

Polarity plug-in receptacles are provided for 110-volt and 220-volt single-phase operation with terminal posts for 220-volt three-phase operation. Each receptacle is so arranged that it is impossible to insert any plug into the wrong receptacle, the company states.

The unit is mounted on a heavy structural steel chassis with multiple leaf springs, high-speed timken bearing wheels, pneumatic tires, dead stick stand, ball-type hitch, tail light, side and rear reflectors, license bracket and fenders with fuel tank and sufficient storage space for miscellaneous equipment.

The unit can be equipped with up to 4—80,000 C.P. flood lights adjustable to any position, swinging full 360° horizontally providing brilliant lighting over a wide area, according to the company. Request NP702.

•

FULLY COLOR CODED ALPETH—Alpeth telephone cable is now being manufactured by General Cable Corp. and is readily available and distributed through Automatic Electric Sales Corp. and Leich Sales Corp., Chicago, Ill.

Alpeth is manufactured by General Cable under a Western Electric patent license. It consists of a core of polyethylene-insulated conductors, a mylar-backed rubber core tape, a longitudinally-applied aluminum shield which provides a low shield resistance and a heavy-duty high molecular weight polyethylene sheath overall.

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- **Profitable noise**
- **No more messenger**
- **Perfect protection**
- **Ready to wire in**

Published regularly to help you get the most out of your materials and supplies dollar

by Earl A. Roesch, Office Mgr. and Inside Sales–Rochester

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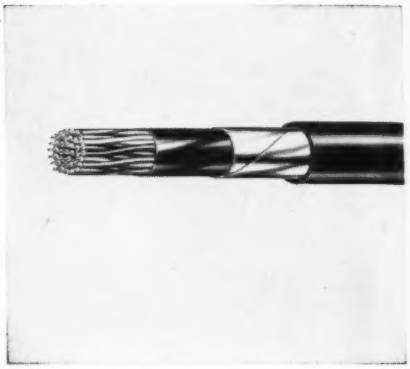

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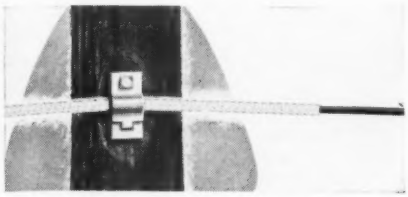

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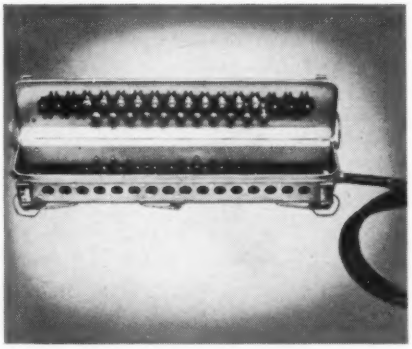

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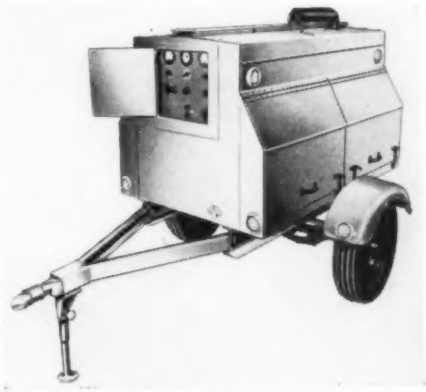
HEAVY DUTY PORTABLE POWER PLANTS—A new heavy duty portable power plant, designed especially to meet emergency power needs of telephone and other companies for emergency power and floodlight needs, is announced by Graybar Electric Co.

This portable power plant is mounted on two or four-wheel high-speed trailers, in capacities ranging from 10 KW to 100 KW, 110 or 220-volt single or three-phase current.



The revolving-field separately-excited .8 P.F. generators are designed to supply full rated capacity, powered by liquid-cooled gasoline or diesel engines for continuous service with sensitive governor regulations for maintaining generator frequency variations of less than three cycles.

The control panel is equipped with voltmeter, selector switch, ammeter with current transformers and selector switch, frequency meter, manually operated excitor field rheostat, automatic voltage regulator and is arranged with identified receptacles and terminal posts for ease of connecting loads.

Polarity plug-in receptacles are provided for 110-volt and 220-volt single-phase operation with terminal posts for 220-volt three-phase operation. Each receptacle is so arranged that it is impossible to insert any plug into the wrong receptacle, the company states.

The unit is mounted on a heavy structural steel chassis with multiple leaf springs, high-speed timken bearing wheels, pneumatic tires, dead stick stand, ball-type hitch, tail light, side and rear reflectors, license bracket and fenders with fuel tank and sufficient storage space for miscellaneous equipment.

The unit can be equipped with up to 4—80,000 C.P. flood lights adjustable to any position, swinging full 360° horizontally providing brilliant lighting over a wide area, according to the company. Request NP702.

•

FULLY COLOR CODED ALPETH—Alpeth telephone cable is now being manufactured by General Cable Corp. and is readily available and distributed through Automatic Electric Sales Corp. and Leich Sales Corp., Chicago, Ill.

Alpeth is manufactured by General Cable under a Western Electric patent license. It consists of a core of polyethylene-insulated conductors, a mylar-backed rubber core tape, a longitudinally-applied aluminum shield which provides a low shield resistance and a heavy-duty high molecular weight polyethylene sheath overall.

TELEPHONY PUBLISHING CORP.
608 S. Dearborn St.
Chicago 5, Ill.

Please have the manufacturer send me without obligation the literature indicated by the following numbers:

NP702_____; NP703_____; NP704_____; NP705_____;
NP706_____; NP707_____; NP708_____; NP709_____;
NP710_____; NP711_____; NP712_____; NP713_____;
NP714_____; NP715_____; NP716_____.

Name.....**Title**.....

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Relays with long-lasting twin contacts of precious metal.

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Parts delivery overnight to most points.

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Busy—lamp field for at-a-glance check of stations in use.

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Key senders dial automatically on larger systems.

Incoming calls stored and put through automatically.

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UNITED STATES INSTRUMENT CORPORATION
P.O. Box 33-T. Charlottesville, Virginia

Cables having a core diameter over 0.67 inch are made with a corrugated aluminum shield to insure flexibility.

The color coding for this improved telephone cable is confined to pairs one through 26 thus providing a simple easily memorized color coding sequence, according to the company. Full color coding allows identification of any pair in the cable by the colors of the pair and the binder.

The company reports the necessity for ringing out conductors is eliminated, and use of this cable with ready-access terminals permits association of pair numbers and colors on cable record cards so the assignment clerk can readily identify to the installer the circuit pair connection to the drop.

Alpeth is designed for aerial and duct use. For direct burial, DS Alpeth (double-sheathed) is available. Both of these cables are manufactured in 11 thru 404 pairs in 19, 22, 24, and 26 gauge. Request NP703.

•

PLASTIC JARS FOR LARGEST SIZE BATTERIES—The largest plastic battery jar ever molded has enabled Exide industrial division of The Electric Storage Battery Co. to complete conversion of its stationary batteries from glass

to plastic jars, the company announces. Use of a strong, light-weight, heat-resistant polystyrene plastic jar has enabled the Philadelphia firm to increase the rated capacity of its batteries, assure permanently leak-proof jar construction and substantially increase electrolyte volume.

The container — 19⅝ inches deep, 14½ by 13-5/32 inches—is used for the largest cells in Exide's F-line—the FMP-25 Exide-Manchex and the FOP-31 Exide-Tytex. The change from glass to plastic in its entire F-line of batteries completes the conversion of stationary power units used in utility, telephone, railway, emergency lighting and industrial plant operations.

The new F series Exide-Manchex are rated from 415 to 996 ampere-hours and the F series Exide-Tytex from 469 to 1173 a-h, both at the eight-hour discharge rate. Use of the plastic jars enabled Exide to enlarge the plate size to gain up to 11 per cent in rated capacity.

Both jars and covers are made of polystyrene. Leak-proof jar construction is accomplished by permanently bonding the plastic cover to the jar, Exide reports.

The new plastic-jar design provides greater space between the plates and the top and the bottom of the jar, substantially increasing electrolyte volume. According to the company, in normal float service, in which a battery is always connected to a charging line, water needs to be added only about once a year to assure adequate electrolyte level above the plates.

The improved Manchex and Tytex batteries also are well adapted to cycle service, states the company. The enlarged reservoir at the bottom of the jar provides ample sediment space for even the most severe cycle applications.

The greater volume of electroylte increases the discharge capacity of the cell, providing an extra reserve of power when needed. It also lessens the drop in specific gravity during discharge.

The polystyrene is resistant to heat and cold. It is unaffected by temperature extremes within the normal range recommended for battery operation, states the company. It absorbs shock, won't shatter and is easy to ship. The plastic jars, with nearly perfect optical properties, are easy to clean.

In the F-line, elements are hung on special ledges molded into the side walls of the jar. Hard rubber cradles underneath the straps for the positive and negative plates prevent any scale shed by the straps from falling between

for your cable maintenance needs

S&G MANUFACTURING CORP.

presents . . .

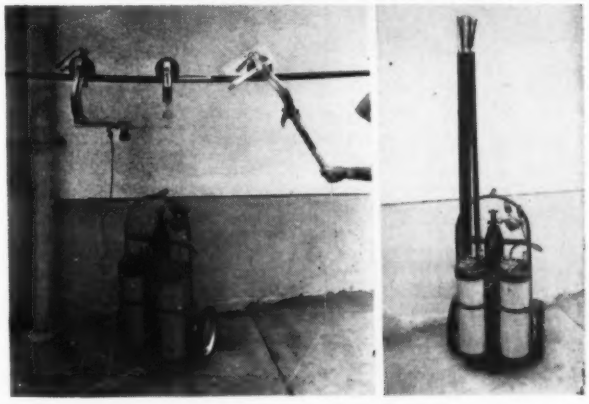
MODEL A

Air Compressor Dehydrator

Exchange equipment designed to supply chemically dry air for telephone cables, aerial and underground, this unit can supply as many as 30 cables. The unit is equipped with volume recording air meter, high and low pressure alarm switches, humidstat and hour meter.

- Completely automatic in operation
- Air Purifier to eliminate oil mist
- Incorporates the latest safety devices

LEAK DETECTOR APPLICATORS



- Castings — aluminum for light weight
- Safety Brackets—steel galvanized
- Nozzle and Piping—brass
- Liquid Line—heavy wall plastic tubing
- Liquid Tank—steel galvanized and brass fittings
- Wheel — nylon bearings, self-lubricating

Applicators use a highly successful chemical type leak detector. Dual nozzles spray all sides of pressurized cable. Bubble cluster forms around leak within minutes and can be clearly seen from the ground. Air pressure bottle in cart supplies regulated pressure in solution tank at all times, can be adjusted for different height cables. For further information on this equipment, as well as the famous S & G Mobile Power Unit and Maintenance Generators . . .

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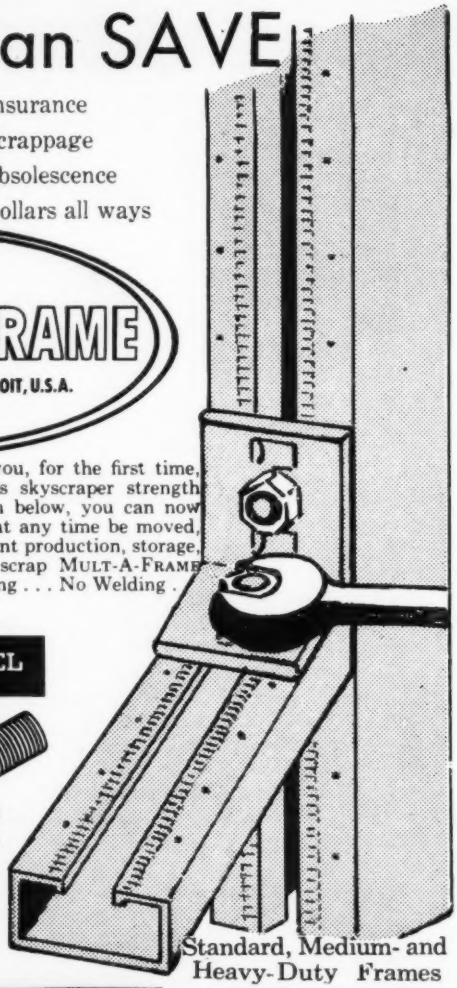
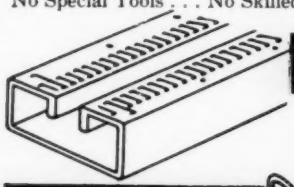
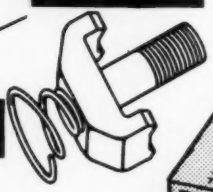
AINSWORTH DETROIT, U.S.A.

This versatile, new framing material offers you, for the first time, a safe, fully-locking structure that provides skyscraper strength without bulk. With the 3 basic units shown below, you can now build equipment for present needs that can at any time be moved, adapted, or converted to meet new and different production, storage, and maintenance requirements. You never scrap MULT-A-FRAME . . . you use it over and over again. No. Drilling . . . No Welding . No Special Tools . . . No Skilled Help!

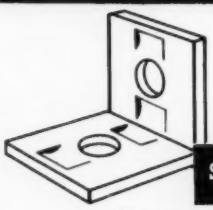




CHANNEL



SPRING-T-BOLT



SAFE-LOCKING FITTINGS

Standard, Medium- and Heavy-Duty Frames

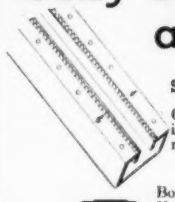
No. 3000 Series—16-gauge
1⅝" x 13/16"
Cold-rolled steel

No. 5000 Series—12-gauge
1⅝" x 1⅝"
Cold-rolled steel

No. 6000 Series—16-gauge
1⅝" x 1⅝"
Cold-rolled steel

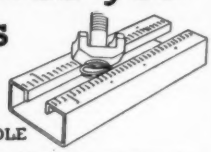
...only tools needed are a saw and wrench

Only MULT-A-FRAME gives you all these advantages



SIMPLE TO MEASURE

Channel Frame has rolled-in dots to show inches, dashes to show feet. You can measure lengths quickly, *accurately*.

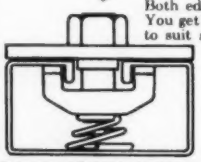


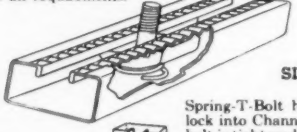
EASY TO HANDLE

Head of Spring-T-Bolt inserts through slot. Shank extends, so workman can grip it easily without putting fingers inside channel.

FULLY ADJUSTABLE

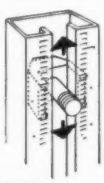
Both edges of channel slot are serrated. You get complete adjustability of fittings to suit any and all requirements.





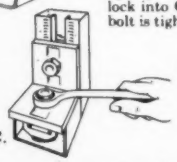
SLIP-PROOF GRIP

Spring-T-Bolt has contact points which lock into Channel Frame serrations when bolt is tightened. Result: a slip-proof grip.



BOLT PROTECTS FLANGE

Edges of Spring-T-Bolt fit over and around flange. Flange cannot spread, twist or warp.



FITTINGS KEY INTO FRAME

Safe-locking Fittings have raised nubs that key into Channel Frame slot, prevent rotation, sideway and jackknifing.

"1000 and ONE" uses for SCAFFOLDS, HANGERS, RACKS, ETC.

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Authorized MULT-A-FRAME Distributor

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the plate separators and causing short circuits.

Copies of the revised catalog and data sheets on the F-line batteries in plastic jars can be obtained by requesting NP704.

•

ELECTRONIC PUNCHED-TAPE TYPEWRITER—An advance in office automation has been achieved with the introduction of the new Remington Rand electronic punched-tape typewriter, the company announces.

A logical development of the common language concept, on what integrated data-processing is based, the new machine automatically creates and reads the paper tape that activates other equipment and wire communications systems.

When used as an ordinary electric typewriter in preparing source documents, it automatically translates everything or selected data the typist writes into a punched tape for subsequent automatic processing; when fed the

punched tape prepared by it or other machines, it automatically reads and types out the information at the rate of 120 words a minute.

The new machine can be adapted to various data-processing programs with building-block flexibility, Remington Rand states, for it has been made available in three basic models—a tape punching unit, a tape reading unit, and a unit that does both—thus making it possible to arrange the equipment to the specific needs of each location in the overall data-processing scheme.

The new typewriter unifies remote work stations, speeds input and output to and from a centralized processing system, and brings true automation down to the level of basic source paperwork, the company says.

The company states the new punched-tape typewriter is particularly significant where the smaller office is concerned, for it makes possible at minimum expense the big move to paperwork automation. A single typewriter,

TELETYPE celebrates 50 years of NEW ideas!

EARLY TELETYPEWRITER

TELETYPE MODEL 28 PRINTER

A new idea—the first really practical telegraph printer—put the company now known as the Teletype Corporation in business in 1907. And—since we have stressed research from the beginning—new ideas have been coming from our laboratories ever since.

Today, equipment made by Teletype flashes news, messages, orders, reports, reservations . . . classifies freight cars . . . coordinates industrial production lines. It provides a "conveyor system" for channeling complex raw data to computing centers thousands of miles away . . . transmits and reproduces text and punched tape for office automation . . . and simplifies the handling of many other modern "chores."

Ideas like these are being applied to customers' problems by communications companies every day, increasing revenues from private wire and teletypewriter exchange services.

For basic information on the application of Teletype equipment, write for a copy of our booklet, "The ABC's of Teletype Equipment." Teletype Corporation, Dept. T7, 4100 Fullerton Avenue, Chicago 39, Illinois.

1957 Golden Anniversary Year

TELETYPE®

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with punch and read units, might carry the full load of common language data processing in the small office.

In the medium-size firm, a number of units may be used to handle the higher volume. Tapes punched automatically can be converted to punched cards for automatic tabulation of records, reports, and statistics, either on the premises or at a service bureau.

Large firms can establish continuous interoffice automation from the initial entry to tabulating or electronic data processing machines by means of punched-card or magnetic-tape converters. At any stage of the procedures, data can be automatically wire-transmitted to provide interoffice operational or data processing communication.

For example: while a sales order received in Dallas is being typed up in document form at its point of origin, a simultaneous record of the order is automatically prepared in punched tape. This tape, in turn, activates a Teletype message to be flashed to a centralized data processing point in Chicago or New York.

There the tape feeds directly into a Univac File-Computer (or, after automatic conversion, into a punched-card or magnetic-tape computer) for a fully automatic accounting, inventory adjustment, and statistical analysis. Acknowledgement of the order, updated file information and other pertinent instructions are then flashed back to Dallas via the same tape-activated wire service, to be automatically typed out.

Picture this happening continuously, Remington Rand suggests, not only in Dallas but simultaneously in all other cities where sales are being made, and the importance of this development becomes apparent.

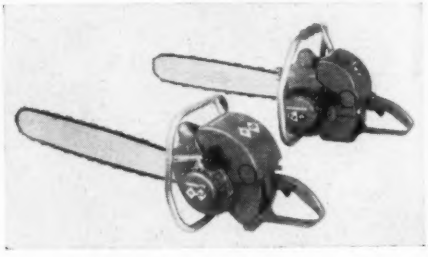
Obvious applications for the new equipment in all types of business include:

Purchase order writing.
Accounts payable (automatic check writing).
Salary and factory payrolls.
Production orders.
Quality control and parts inspection.
Account records.
Insurance declarations (in casualty and fire companies).
Transportation freight billing and waybilling.
Securities stock transfers.
Personnel records.
Voters' registration in county government offices.

The typewriter traditionally a business tool of great value, has now become the mainspring of office automation. The new machine makes automation practical in any size and kind of business organization, says Remington Rand. Request NP705.

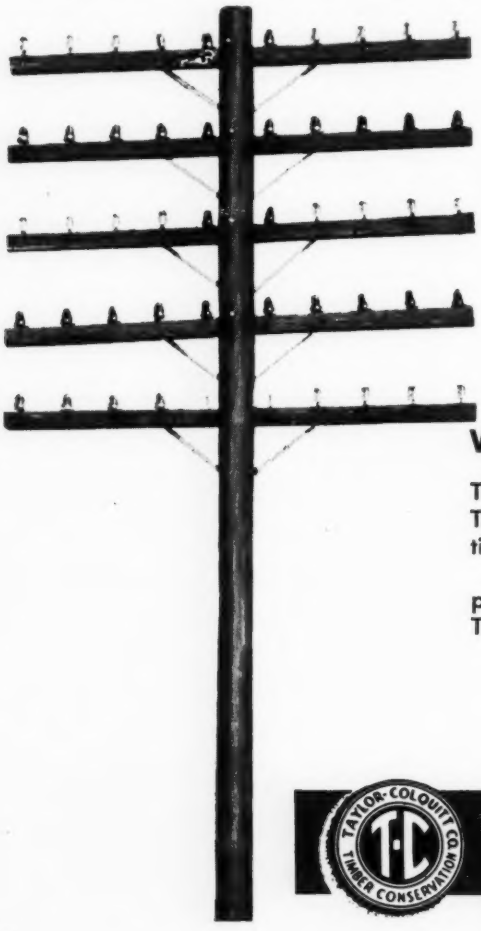
•

CHAIN SAWS—Two new chain saws —Model 6-22 and EZ-6—have just been announced by Homelite, a division of Textron, Inc. Called the Homelite "Power Twins," both new chain saws have a 6 horsepower engine—the EZ-6



is a direct-drive, 19-pound unit; the 6-22 is a gear-drive, 22-pound unit. The company states they are the lightest 6 horsepower chain saws in the world.

Homelight reports: "With its 6 horsepower, the EZ-6 will cut through 8-inch oak in 4 seconds, 18-inch pine in 12 seconds and bring down trees up to 5 feet in diameter. Its 19 pounds are perfectly balanced—easy to handle on any cutting job whether it's pruning



REDUCE POLE REPLACEMENT

WITH T-C PRESSURE-TREATED POLES

TELEPHONE COMPANIES have an enormous stake in wood . . . TAYLOR-COLQUITT helps protect this investment by providing effective preservative treatment for poles.

TAYLOR-COLQUITT assures you year-after-year protection for poles. Make your poles last longer and reduce replacement — specify T-C Pressure-Treated protection.

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T-C TAYLOR-COLQUITT CO. TIMBER CONSERVATION

TAYLOR - COLQUITT CO.
SPARTANBURG, SOUTH CAROLINA

PLANTS AT SPARTANBURG, SOUTH CAROLINA AND WILMINGTON, NORTH CAROLINA

trees, or cutting fence posts or hedgerow."

The gear-driven 6-HP Homelite 6-22 is built for hard, everyday use and has the lugging power to bring down trees up to 7 feet in diameter—can cut through 20-inch trees in 18 seconds, the company reports.

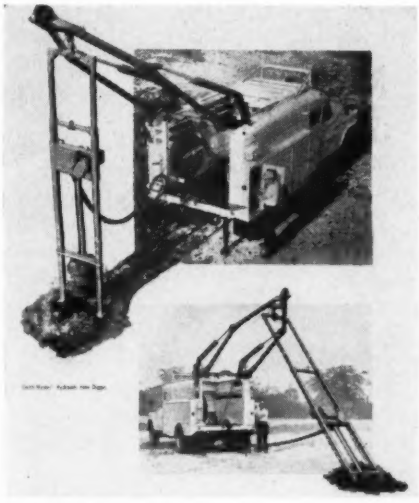
Light weight (22 pounds) precision balanced, the 6-22 is easy to carry, easy to handle, easy to control, states the company. A big, new gas tank gives more cutting time without refueling.

One of the most important features of the 6-22, according to Homelite, is the complete set of attachments that are available for quick switching from a straight blade chain saw to a brush cutter, to a plunge-cut bow-saw and to a clearing tool.

"In addition," states the manufacturer, "the new Homelite 'Power Twins' —EZ-6 and 6-22—are equipped with diaphragm carburetors to permit cutting in any position, without adjustments or loss of power." The high-compression, short-stroke design reduces engine wear, assures less down-time, keeps maintenance costs low. Request NP706.

•

HYDRAULIC HOLE DIGGER — The addition of a hydraulic hole digger to its Powers-American line of utility bodies and equipment has been announced by McCabe-Powers Auto Body Co.



The digger, designated "Earth-Master," is ideally suited for use with the Powers-American Series PM-2 "Pole-Master" hydraulic derrick, according to Brooke Daly, company vice president. It can be installed on most "Pole-Master" derricks now in use, or factory-mounted in conjunction with a derrick and body built to fit individual operating requirements.

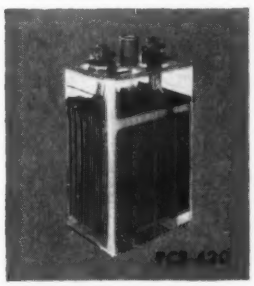
Mr. Daly states the unit is fully hydraulic in operation and is powered by a hydraulic pump driven by the

Telephone batteries engineered for—

25

years of service

C & D PlastiCal®



If you want extra-long life from batteries in telephone service—be sure to specify C & D PlastiCal® batteries.

Here is the original lead-calcium telephone battery that provides at least 40% longer life than conventional telephone batteries. With C & D PlastiCal telephone batteries you get:

- **Reduced maintenance**—Electrolyte level can be checked at a glance; cells require 1/5 as much water as conventional batteries.
- **Lower in-place cost**—Rugged one-piece plastic case is 20% lighter than glass; reduces shipping and breakage costs.
- **Increased safety**—C & D's patented Saftee-Vent eliminates the chance of accidental explosions; serves as funnel for filling.

These plus many other benefits mean that in the telephone field, C & D is—

Your better battery buy!

Literature available

Write for complete description and specifications in C & D PlastiCal Bulletin T-528.

C&D **BATTERIES, INC.**

of Conshohocken, Pa.

SINCE 1906

SALES AND SERVICE OFFICES IN PRINCIPAL CITIES FROM COAST TO COAST

truck engine. It will dig holes up to 9 feet 4 inches in depth, at various angles, in practically all types of soil. The auger is guided at all times, to assure straight, clean holes. It travels up and down on a twin-column support frame which can be turned to various positions and extended or retracted to fit terrain and working conditions.

Auger is rotated in either direction by a reversible hydraulic motor. It is raised and lowered by a separate hydraulic motor which, in combination with downward thrust that can be applied by the derrick, provides more than ample "down pressure" for digging in exceptionally hard soil.

The digger controls are normally installed beside derrick controls in a rear body compartment, to give operator full view of all digger and derrick movement.

When a hole has been dug, the digger will swing out of the way to permit use of the derrick for setting pole. The digger can be furnished with augers up to 20 inches in diameter, and with special heads to facilitate digging where soil condition would retard auger operation. Request NP707.

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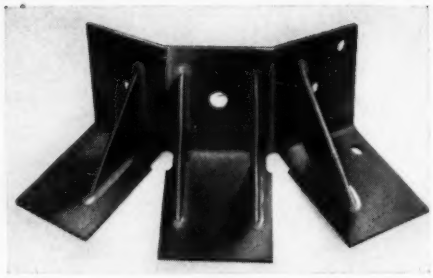
POLE BEARING PLATE—The A. B. Chance Co. announces it is now manufacturing a pole bearing plate.



Used in pairs, at the butt of a pole, pole bearing plates are designed to prevent uplift forces from pulling a single pole out of the ground or upsetting the balance of poles on H-frame transmission lines.

Weighing 18 pounds per unit, a pair of pole bearing plates provide a collective 200 square inches of cone-shaped bearing surface.

Made of ¼-inch mild steel, Chance pole bearing plates are available in either an asphalt-paint or a hot-dip galvanized finish. Request NP708.

•

EARTH-BORING AND POLE-SETTING VEHICLE — A new four-wheel-drive earth-boring and pole-setting vehicle, with the first rubber-tired chassis of its kind, designed especially as a digger carrier for utilities, utility contractors, and railroads, has been announced by Four Wheel Drive Auto Co.

Called the FWD Blue Ox Utility (BXU) digger, the new vehicle was developed and built by FWD for spot installation of new and replacement poles as well as for new line construction and operations ordinarily requiring crawler tractors. The new BXU can be driven over paved or unpaved roads to job locations at speeds up to 55 miles an hour without damage to the roadbeds.

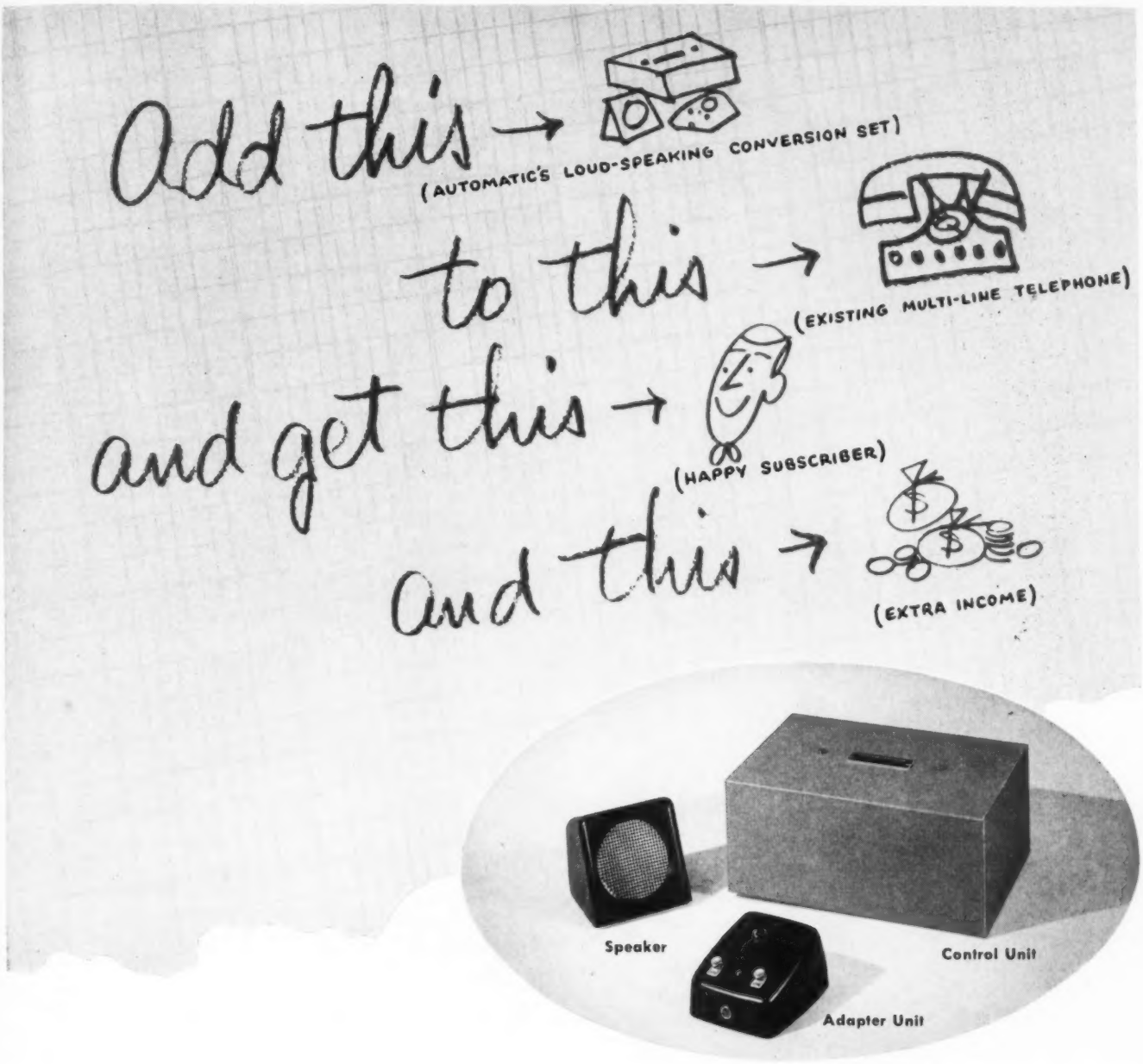
FWD's new rubber-tired digger unit can be operated on landscaped road shoulders and residential areas under normal conditions without tearing up such terrain. The Blue Ox utility unit's high traction and maneuverability characteristics also enable it to traverse soft grades and muddy, sandy, rough, and other adverse terrain to reach digging and pole-setting sites.

The FWD Blue Ox utility vehicle has rear-mounted digger and winch and can be equipped with an additional front-mounted winch; or the chassis can be outfitted with an aerial tower for use in off-road power-line maintenance, insulator washing, and similar tasks.

The BXU chassis is engineered for maximum tower load and torsion for use with any type 33-foot, 360-degree tower, the company says.

Drive power of the BXU is constant to all four of its 14:00x20, 12-play, 72-inch-tread tires. Oscillating front springs and high ground clearance design give the vehicle continuous positive traction for travel in rough areas, with power assist providing effortless steering, according to FWD. Front springs lock for stability during digging.

The unit is equipped with forward seat and controls for driving the vehicle and rear seat and platform, with complete engine and digger controls, for digging operations. In transit, the



Almost any busy keyset telephone user would like loud-speaking service, too! He can have just that with, *and only with*, Automatic's Loud-Speaking Conversion Set. This handy set actually enables you to add loud-speaking service to an existing multi-line telephone quickly, easily. Result: the utmost in telephone convenience—and a sure way to added income.

Three separate units make up the Conversion Set: a Control Unit, a Speaker and an Adapter Unit, which has "On" and "Off" buttons, volume control, light signal, and microphone.

Get to know all about Automatic's Loud-Speaking Conversion Set now! Write for Circular 1867. Address:

Automatic Electric Sales Corporation, Northlake, Illinois.
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digger unit rests in a cradle alongside the driver's seat.

Power is provided by a 308-cubic-inch, 150-horsepower series BD-308 engine, with full torque power takeoff for digger and S.A.E. power takeoff for winch operations. The BXU has a five-speed series F51C standard transmission and series 2A62 auxiliary transmission for creeping speeds necessary in moving poles and high speeds required for over-the-road travel.

Forward end of the vehicle's slipper-mount front springs is fastened to the frame in the usual manner, but the rear end slides freely in a saddle which pivots in the middle of the chassis frame, permitting the springs and either front wheel to oscillate vertically. Thus, the BXU can "walk" over rough terrain without excessive pitching, states the company.

Counterweight front bumper, engine overhang, front spring locks, and solid-mount rear axle furnish proper balance, weight distribution, and stability for digging and pole-setting operations.

Weight of the new FWD utility vehicle is 8,370 pounds without winch and boring machine. The frame is heat-treated, manganese alloy steel channel. Open drive line and clear mountings facilitate service and maintenance, FWD states.

The unit is designed for use with or without fold-down windshields and canopy for driver's protection. It is available with one- or two-man front seat and the rear seat, at earth-boring and winch controls, is optional. The FWD Blue Ox digger vehicle also is available with enclosed cab and rear fenders. Request NP709.

•

PEDESTAL OR WALL-MOUNTED TELEPHONE BOOTH—Gladwin Plastics, Inc. announces availability of a pedestal or wall-mounted telephone booth, the Boothette, for side walk, drive-in, indoor and other locations.

On city streets, the Boothette can be pedestal-mounted (like parking meters). It can be wall-mounted on sides of buildings, in building nooks or entrance ways. It can also be pole-mounted on city or public service light poles, the company states.

Small and compact, the Boothette's see-through, clear plastic construction does not obstruct the vision of motorist or pedestrian, the company states.

Plastic housing is abailable in all solid colors, Gladwin states, plus pastels, molded-in silver or gold woven cloth, straw, leaves, flowers, and other patterns.

The Boothette is shipped ready for installation. Request NP710.

•

CONTACT BURNISHER—A new, vest pocket, non-residual contact burnisher, which may be carried in the serviceman's pocket, has been announced by P. K. Nueses, Inc.

Dielectric black plastic barrel and cap permits working safely on "live" contacts, according to the company.

The burnisher comes in two thicknesses of blades. Six blades are furnished with each unit. No. CB-5 has blades .007 inch thick. No. CB-54 has blades .004 inch thick. Request NP711.

•

STAINLESS STEEL DROP WIRE CLAMPS—Reliable Electric Co. has announced the introduction to the telephone field of a new line of stainless steel drop wire clamps to replace its copper series.

These new clamps are for use with dumbbell, parallel non-reinforced, parallel reinforced and twisted pair drop wire.

Some models of the new clamps feature a smooth shim which is de-

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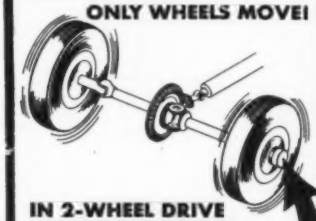

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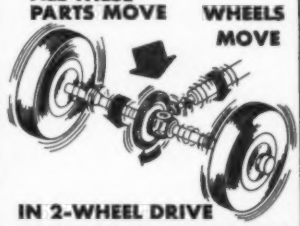

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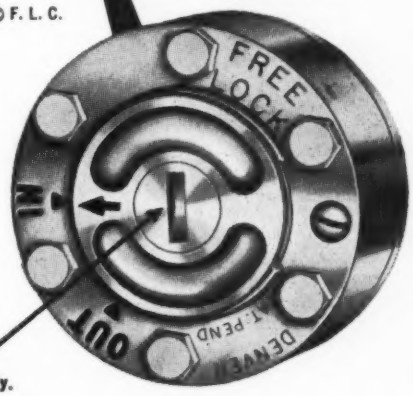

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signed to give easy sliding action. This is accomplished because the wedge now has a metal surface to slide on rather than the insulation of the drop wire.

All of these new clamps are equipped with stainless steel balls to give long life under all operating conditions, states the company. The P-1 series is all stainless steel. The P-2 series has an aluminum shell but a stainless wedge.

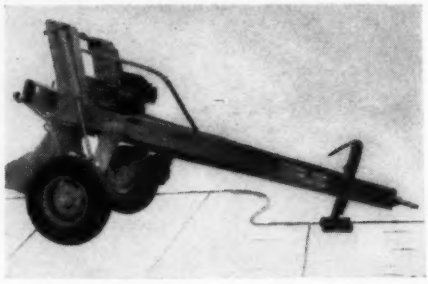
In non-corrosive areas, the aluminum-shell type clamps can be used. In costal areas, the all-stainless-steel clamp is recommended. Samples of these new clamps are available upon request. Request NP712.

•

WIRE AND CABLE LAYER—An improved Model "C" Pull-Type Ryan wire and cable layer is being produced by the F. B. Ryan Co.

The Model "C" provides direct burial of all types of underground cable and wire. It now is offered with a new heavy-duty winch, hydraulic tongue jack, new colter wheel assembly and optional electric brakes.

The model "C" is a heavy-duty machine designed for all types of terrain and is being used by contractors on large jobs and by major telephone companies, the company reports. The Ryan firm also produces a smaller model cable layer for use on farm lines and urban developments.



The "C," which is usually drawn by a track-laying type tractor, will place wire and cable at depths of 24 to 42 inches—at speeds up to 1½ miles per hour. Depth of placement is accurately controlled by an engine-driven hydraulic system, according to the company.

This same hydraulic system permits the operator to raise and lower each of the wheels independently and level the machine regardless of terrain, states the Ryan company. It provides excellent protection for the cable. The use of sheaves—equipped with sealed ball bearings—for the cable to pass over, allows the cable to be laid loose and free of tension. It eliminates pulling the cable through a tube, which can cause tension, and scuffing of cable covering.

Three different size blades are provided for the machine. The company states, "While the 3-inch blade—which handles any wire or cable with an outside diameter up to 2⅜ inches—is considered standard equipment, it can also be used with a 2-inch or a 4-inch blade. The 2-inch blade will handle any wire or cable with an outside diameter up to 1½ inches and the 4-inch blade handles cable up to 3¼ inches. The power required to pull the small blade is a good deal less than that required for the large blade operating at the same depth."

Regular equipment includes: (a) hydraulic jack for raising tongue of the machine; (b) rear winch for bringing up and towing the reel trailer when large reels of cable, that cannot be mounted directly on the machine, are used; (c) rolling cutter operating ahead of the blade to cut trash and sod. This cutter is easily adjusted for depth, says the company, and operates with adjustable spring tension which is adequate for good cutting but will still clear rock and other obstructions without damage. (d) A new combination spring-loaded toggle-type tractor hitch with interchangeable towing eye.

The company reports the machine can be equipped with electric brakes—as optional equipment—for safe travel over highways behind a truck. The sloped-back design of the Ryan "patented" blade—made of fine high carbon steel—with sharp cutting edge and teeth makes it pull easier, thereby creating less surface disturbance than some conventional type blades. Request NP713.

•

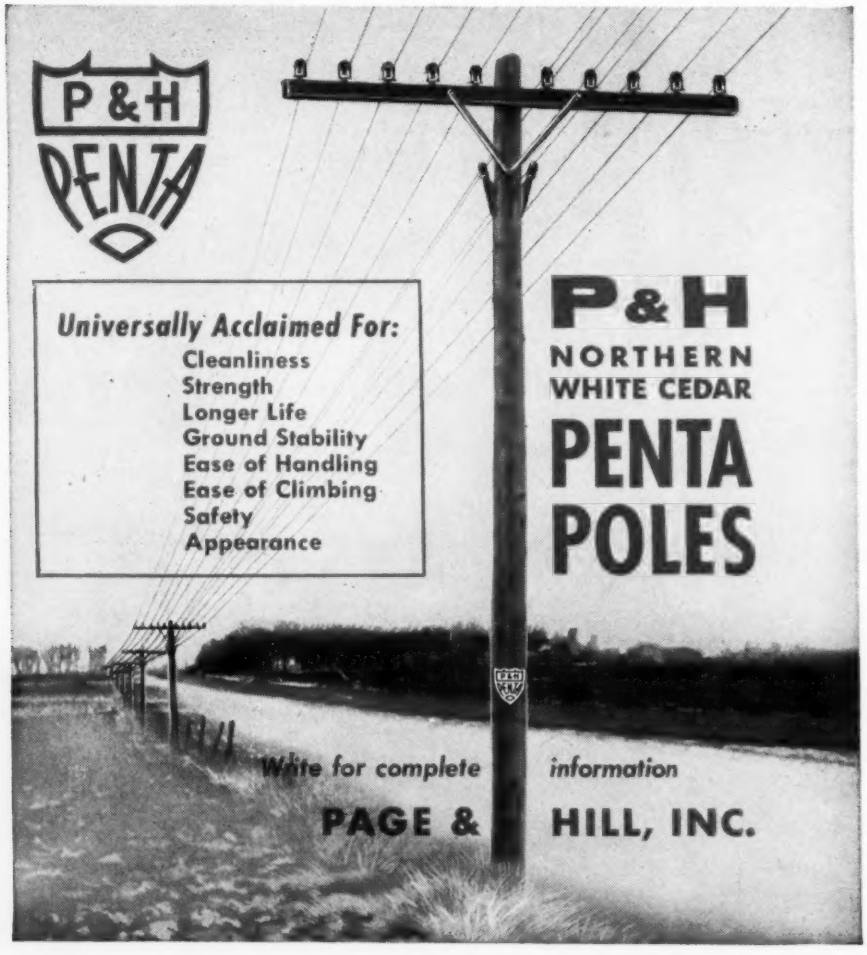
WAXED LACING CORD—The Linen Thread Co. announces the development of a new lacing cord known as Barbour's Waxed Nyak Lacing Cord.

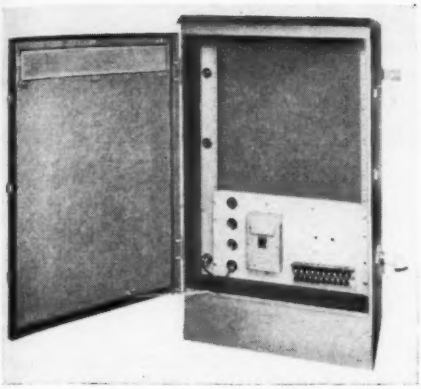
Available in #6, 9, 12 and 15, this new lacing material offers many qualities not usually found in synthetic lacing cords, the company states.

Barbour's waxed Nyak is said to have excellent knot-holding ability, pliability and desirable working qualities found only in natural fiber lacing cords in the past. This waxed lacing cord is a combination of synthetic fibers designed especially for harness lacing. Request NP714.

•

POLE-MOUNTED CABINETS—A new line of low-cost pole-mount cabinets made by the Warren Mfg. Co. provide for "weatherized" protection in exposed locations. Originally designed





to house carrier communications equipment in remote locations, these weatherproof enclosures are equally well suited for any 19-inch panel-mounted

The cabinet is drip-proof and insect-proof, and it is fabricated from 16-gauge steel. Fine copper screening over louvers provides for adequate natural ventilation, the company states. Blank louver panels are furnished to equip the enclosures for rain, snow or dust conditions by closing the screend openings.

Power input is from the bottom of the cabinet and line connections are made through a weatherhead fitting. An external ground connection is also provided.

Designated as Type 461, this enclosure is available in two sizes. Type 461-1 has 29 rack units of 19-inch panel space with six pre-wired power receptacles. It measures 59 inches high, 22 inches over-all and weighs 110 pounds.

Type 461-2 has 16 rack units of 19-inch panel space with three pre-wired power receptacles. It measures 37 inches high, 18 inches deep, 22 inches wide and weighs 75 pounds. Both sizes are equipped for crossarm mounting by rugged steel mounting straps.

An auxiliary type 486 power panel is also available as a separate accessory to the type 461 enclsoure. This 10½-inch high by 19-inch wide by 5-inch deep panel assembly normally consists of a circuit breaker, four power receptacles and one 10-terminal carbon-block protector. Jumpers are provided to interconnect the 486 power panel and 461 enclosure. Finish is silver hammertone.

Additional equipment, such as a second protector and voltage regulating transformer, may also be incorporated on type 486 power panel upon request. Request NP715.

•

METAL WARNING SIGNS—A. C. Davenport & Son, Inc., manufacturer of safety boards and bulletin boards, announce availability of a complete line of stock metal warning signs.

Containing more than 300 stock titles, the Dav-Son line covers many sign requirements of factories, office buildings, municipal departments, schools, hospitals, and other institutions etc.

The signs are silk-screened in weatherproof enamel paints in two or three colors on heavy-gauge metal, and are suitable for use both indoors and out.

The company states its selection of Danger, Caution, Safety First, and Notice signs, 14 by 10 inches, includes such frequently needed titles as "Danger—Look Out for Cars," "Caution—Slippery When Wet," "Safety First—Keep Aisles Clear," "Notice—No Trespassing Under Penalty of the Law," and others. Traffic signs, clearly lettered in

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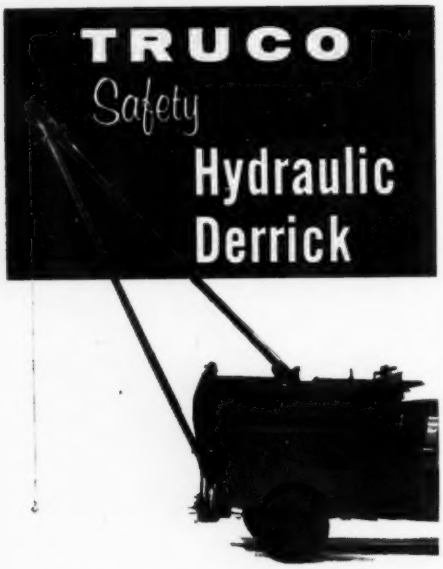

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vivid yellow and black, are 14 by 18 inches, and cover all basic traffic instructions. A series of directional signs, measuring 14 x 7 inches, features bold directional arrows pointing left or right, with wording such as "Fire Exit," "Elevator," "First Aid Room," "Air Raid Shelter," and many others.

In addition to the stock signs, the company can produce metal signs to order for any special purpose. Prices will be quoted on receipt of specifications as to size, colors, special design, etc. Request NP716.

New Plastic Cable Plant Opened in British Columbia

British Columbia has consolidated another big step in industrialization, it was reported on July 13.

The occasion was the formal opening of Phillips Electrical Co.'s new plant in the Vancouver area which has been built for the manufacture of plastic-jacketed cables.

Phillips Electrical is the Canadian affiliate of the British Insulated Cables Ltd. group, largest cable organization in the world, which made and installed the submarine cable recently from the mainland to Vancouver Island.

The new factory will manufacture wire and cable for the electrical, the communications, and the construction industries. The plant will be all-plastic, i.e., it will apply polyvinyl chloride (PVC) or polyethylene insulation or jackets to the wires and cables made.

Phillips has been turning out this type of cable at their Brockville, Ont., plant for some years, but this is the first factory to be erected solely for plastic insulation.

Built on a 12-acre site, the new factory can be expanded to four times its present size. It was erected at a cost of $750,000, and is equipped with the latest plastic-insulating machinery at a further cost of $750,000, it was stated.

Kellogg Names C. F. Cheney A Regional Manager

Charles F. Cheney has been named northeast-central regional manager of Kellogg Switchboard & Supply Co., a division of International Telephone & Telegraph Corp., according to an announcement by O. C. Bailey, general sales manager.

C. F. CHENEY

In this capacity, Mr. Cheney will direct the over-all operations of both the northeast and central divisions and he will have the commercial responsibility for all Kellogg products in the areas of telephone communications, microwave, carrier equipment and industrial components. His headquarters will be in Passaic, N. J.

Mr. Cheney, who as IT&T's candidate was awarded the Alfred P. Sloan Fellowship for 1956-57, participated with 33 other representatives of American and European industry in one year of specialized study in Business and Economics at Massachusetts Institute of Technology. He received a Master of Science Degree from MIT in

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CARRIER-TELEPHONE EQUIPMENT

C5 Carrier-Telephone Terminal (J68756). A kit for adding a fourth toll-grade channel to existing C systems is available. • C1 Carrier-Telephone Repeater (J68757) • 121A C Carrier Line Filter • H Carrier Line Filter (X66217C).

CARRIER-TELEGRAPH EQUIPMENT

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VOICE-FREQUENCY EQUIPMENT

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D-C TELEGRAPH EQUIPMENT

16B1 Telegraph Repeater (J70037B) • 10E1 Telegraph Repeater (J70021A) • 128B2 Teletypewriter Subscriber Set (J70027A).

TEST EQUIPMENT

2A Toll Test Unit (X63699A) • 12B, 13A, 30A (J64030A) and 32A (J64032A) Transmission Measuring Sets • 111A2 Relay Test Panel (J66118E) • 118C2 Telegraph Transmission Measuring Set (J70069K) • 163A2 Test Unit (J70045B) • 163C1 Test Unit (J70045D).

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June 1957. In partial fulfillment of the requirements for his degree, Cheney prepared a thesis, "An Evaluation of Systems Controlling the Production of Custom-Engineered Product Lines," which involved qualitative analyses of systems used by three Independent telephone manufacturing plants, a Bell System manufacturing unit, and a business machine company.

Mr. Cheney first joined the Kellogg organization in 1949 as a sales representative in the New York, Pennsylvania and Ohio territory. In July 1953, he was promoted to the position of manager of the central sales division in Mansfield, O. He was transferred to Chicago as manager of the Chicago division in August 1954, and he retained this post until May 1956 when he qualified for the Sloan Fellowship which enabled him to participate in MIT's Executive Development Program.

Following three years' service with the U. S. Signal Corps during World War II, Cheney was graduated from the University of Wisconsin with a Bachelor of Science Degree in Electrical Engineering. He is a member of the Independent Telephone Pioneer Association and the American Institute of Electrical Engineers.

AE Names Gilbert Gray As Staff Engineer

Gilbert G. Gray has been named a staff engineer with Automatic Electric Sales Corp.

G. G. GRAY

Mr. Gray joined Automatic Electric Co. in 1939 and has since served as testing bureau and laboratory technician, apparatus and equipment engineer, and as supervisor of equipment proposal engineering.

He is a registered professional engineer in Illinois.

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MANAGER WANTED AT ONCE for 1100 station telephone company in northwestern Illinois. Must have some experience with dial equipment and be able to supervise all operations. Write Port Byron Telephone Co., Port Byron, Ill.

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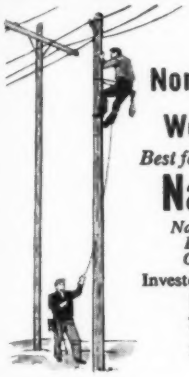

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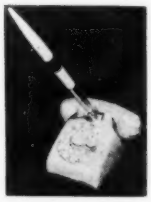

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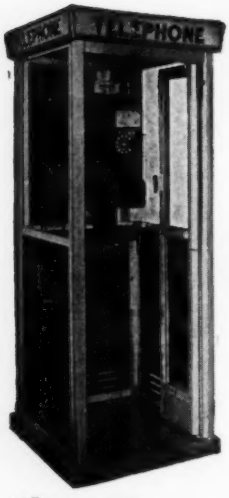

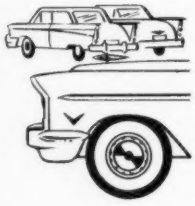

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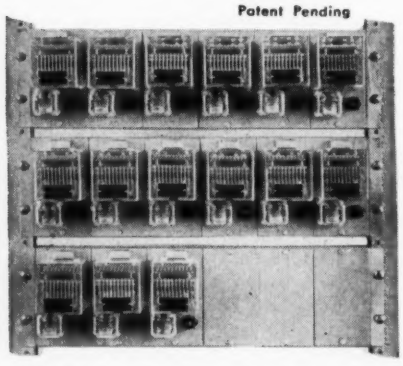

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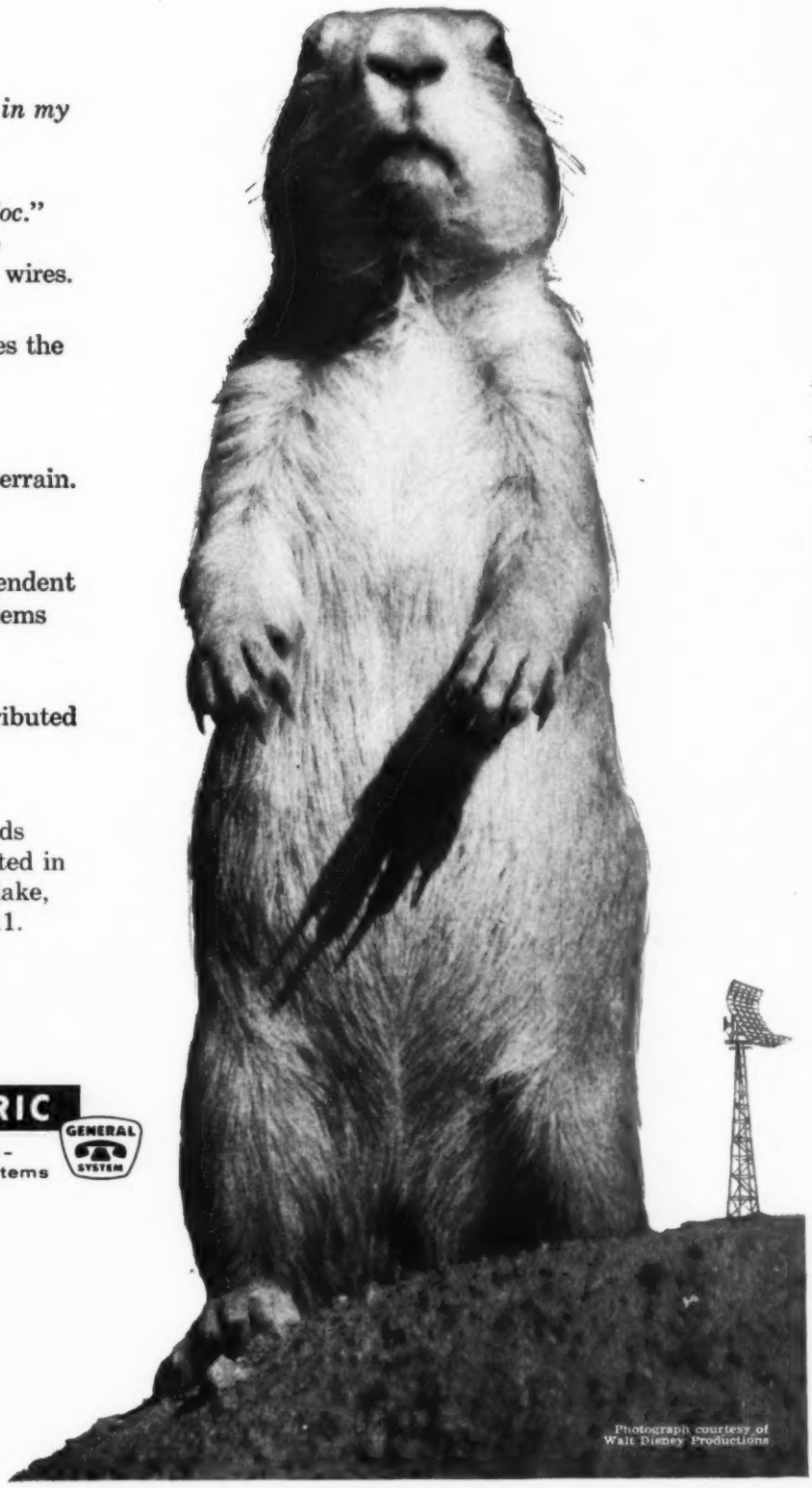

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